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ABSTRACTORS CONTRIBUTING TO THIS ISSUE

UNITED KINGDOM		
A. Ackroyd, M.R.C.S., L.R.C.P.	S. B. Kendall, B.Sc., M.R.C.V.S.	E. J. L. Soulsby, M.A., PH.D., M.R.C.V.S., D.V.S.M.
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E. Cotchin, M.R.C.V.S.	Dr. F. K. Leeb.	
F. L. M. Dawson, B.Sc., M.A., PH.D. M.R.C.V.S.	G. P. Marshall.	
M. Gitter, M.R.C.V.S.	Anna Mayr-Harting, M.D. (Prague).	JAPAN
M. B. Hawksley, B.Sc., M.R.C.V.S.	Jas. G. O'Sullivan, M.R.C.V.S.	Dr. Kogi Saito.
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F. T. W. Jordan, B.Sc., M.R.C.V.S.	A. Seaman, B.Sc., PH.D.	
	W. G. Siller, B.Sc., M.R.C.V.S., DR. MED. VET. (Vienna).	U.S.A.
		Professor H. L. Gilman.

THE
VETERINARY BULLETIN

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DISEASES CAUSED BY BACTERIA AND FUNGI

LIVONI, P. (1955). Mastitis-bekaempelse. Eksperimentelle undersøgelser specielt med henblik på gennemførelse af kollektive bekaempelsesforanstaltninger. [**Control of mastitis.**] — *Thesis, Copenhagen*. pp. 193. [In Danish. Abst. from English summary.] **2153**

An experimental campaign against mastitis lasting 2 years was conducted with 712 herds; 68% of these herds and 28% of cows were infected. By the end of the campaign 86% of the infected herds were free from mastitis. The following conclusions were drawn: reliable methods of diagnosis are essential; incubation of milk samples before examination is not necessary; individual examination of the milk from each quarter is unnecessary; except in the case of old cows treatment of all 4 quarters is not necessary when only one or two are infected; teat injuries are the most common source of infection; narrow stalls raise the incidence of infection; the most suitable preventive measures are hygienic conditions and the provision of ample space in the stables.—M.G.G.

MCDONALD, N. R. (1955). **Treatment of mastitis.**—*N. Z. vet. J.* **3**, 152-156. [Author's summary copied *verbatim*.] **2154**

The diagnosis of mastitis is discussed and the literature on treatment reviewed. It is concluded that the dose rate of 25,000 units of procaine penicillin once a day for three days for *Streptococcus agalactiae* mastitis is satisfactory as a general recommendation. Variations of treatment for streptococcal and staphylococcal mastitis are discussed.

IMAIZUMI, K., TANAKA, T. & TAJIMA, Y. (1955). [Haemolytic streptococcosis of guinea pigs. I. Pattern of occurrence and its control measures.]—*Jap. J. vet. Sci.* **17**, 19-24. [In Japanese. Abst. from English summary.] **2155**

After the importation of 10,000 g. pigs

from the U.S.A. in 1949, many of which had died before arrival from *Str. pyogenes* infection, outbreaks of this disease occurred amongst g. pigs in Japan. Control measures, consisting of the elimination of infected g. pigs in registered breeding establishments, have greatly lowered the incidence of infection.

—M.G.G.

I. BONADUCE, A. (1955). Ricerche sull'azione sinergica disinfettante dell'alcool etilico addizionato di alcuni acidi sulle spore del *B. anthracis*. [The synergic disinfectant action on anthrax spores of ethyl alcohol with certain acids.]—*Nuova Vet.* **31**, 164-172. [French summary.] **2156**

II. ALOSI, C. (1955). Ricerche sull'azione sinergica disinfettante dell'alcool etilico e di alcuni acidi sulle spore del *B. anthracis*. [The synergic disinfectant action on anthrax spores of ethyl alcohol with certain acids.]—*Ibid.* 238-244. [French summary.] **2157**

I. B. demonstrated a marked synergic action between ethyl alcohol and various acids added in concentrations of 5%, when these were used as disinfectants for anthrax spores. The acids in question were selenic, perchloric, phosphoric, hydrosilicofluoric and sulphamic acids.

II. Further tests revealed synergic disinfectant action on anthrax spores between ethyl alcohol and oxalic, malonic, malic, silicotungstic, phenylacetic, tannic and metastannic acids. Trichloroacetic acid alone failed to enhance the disinfectant action of the alcohol.—I. W. JENNINGS.

KAFFKA, A. (1955). Zur Morphologie des Milzbrandbacillus unter der Einwirkung von Antibiotics. [Morphology of *B. anthracis* exposed to the action of antibiotics.]—*Zbl. Bakt. I. (Orig.)* **163**, 333-341. [English, French and Russian summaries.] **2158**

Atypical anthrax bacilli were found in

the c.s.f. of a human patient with meningitis who had been treated with penicillin. Atypical bacilli were also found in lab. animals experimentally infected with anthrax and treated with streptomycin, chloramphenicol, aureomycin or terramycin. They occurred as long tangled chains, often with pronounced hooks at each end.—R.M.

PERSENEUS, G., COOPER, M. S. & PERCIVAL, R. C. (1956). [Studies on an anthrax vaccine prepared from non-encapsulated variants of *Bacillus anthracis*.]—*Amer. J. vet. Res.* 17, 153-156. [Authors' summary modified.] 2159

A procedure for the immunization of g. pigs with this vaccine was discussed. A greater percentage of vaccinated animals survived when they were challenged with a culture of greater virulence. A dose-effect curve was presented.

Of 26 sheep vaccinated with the recommended field dose, 25 survived a challenge which was lethal for 20 of 21 controls. Sheep and goats survived doses of vaccine 50 and 500 times greater than the recommended dose.

I. SNYMAN, P. S. (1955). The problem of bovine tuberculosis in the Union of South Africa. — *J. S. Afr. vet. med. Ass.* 26, 241-245. 2160

II. LAMBRECHTS, M. C. (1955). Problems in connection with the inauguration of a national scheme for the control and eradication of bovine tuberculosis in South Africa. — *Ibid.* 247-257. 2161

I. The average incidence of TB. in S. Africa is estimated to be 3%; while many herds are free from infection, in others as many as 82% of the animals may be infected. In view of the large numbers of low grade cattle owned by Africans and by speculators, S. considered that a policy of complete eradication of TB. is at present impracticable.

II. L. described a proposed scheme for the control of bovine TB., and discussed the following problems in particular: diagnosis, compensation, the disposal of reactors, need of funds and shortage of qualified staff.

—M.G.G.

HEBERT, C. N. & PATERSON, A. B. (1955) Tuberculin sensitivity in a sample of attested herds.—*Vet. Rec.* 67, 1143-1153. 2162

Data from the test records of over 7,000 animals in 100 herds, selected from the Register of Attested Herds were examined statistically to estimate the incidence of non-specific sensitization, to compare the reactions

to avian and mammalian types of P.P.D. tuberculin (AT and MT), and to correlate the reactions with age, sex, breed and proximity to woodland. The data of two consecutive years were used. There were no differences in the reactions to tuberculins between corresponding groups in the two years, but in both calves and adults there was a significant difference between the reactions to AT and to MT. The reaction to both increased from birth to a maximum at 3 years. The rate of increase of reaction, as well as the degree of reaction was greater for AT than MT. With animals stated to have "skin TB." the reaction to MT was greater than that to AT and the maximum reaction was found at 2 years, although the greatest incidence was at 7 years. After 2 years bulls showed a greater reaction than steers, but this might have been due to maintenance conditions. Increase in altitude was accompanied by a decrease in reaction and there was a possible, but equivocal, correlation with distance from woodland (i.e., contact with wild birds). The effect of breed was not significant.—A. SEAMAN.

SCHLIESSER, T. (1955). Die Leistungsfähigkeit der Phasenkontrastmikroskopie beim Nachweis von Rindertuberkelbakterien. [Suitability of phase-contrast microscopy for the identification of bovine tubercle bacilli.] — *Zbl. Bakt. I. (Orig.)* 164, 109-112. 2163

Phase - contrast microscopy detected tubercle bacilli in 268 samples of sputum, milk or tissues; only 235 samples were positive by ordinary microscopic examination.

—R.M.

CRONE, P. B. (1956). Prolonged exposure to caustic soda solution in isolation of tubercle bacilli.—*Mon. Bull. Minist. Hlth Lab. Serv.* 15, 30-34. [Author's summary slightly modified.] 2164

Normal caustic soda soln. used for the isolation of tubercle bacilli, when allowed to act for 5 hours instead of one, reduced the number of isolations by about 15%. It is concluded that the alkali is not very harmful and that there is no need to limit carefully the length of time it is allowed to act.

FRESE, H. (1955). Die Bedeutung des Typus bovinus des Tuberkelbakteriums für die menschliche Tuberkulose. [The importance of bovine type tubercle bacilli in human TB.] — *Rindertuberkulose*. 4, 233-247. 2165

A discussion by a medical specialist, largely based on the figures quoted by

Goerttler & Weber [*V.B.* **24**, 3014] for the world incidence of TB. of bovine origin in human beings.—F. K. LEEB.

CUMMINGS, M. M., PATNODE, R. A. & HUDGINS, P. C. (1956). **Passive transfer of tuberculin hypersensitivity in guinea pigs using cells disrupted by sonic vibration.**—*Amer. Rev. Tuberc.* **73**, 246-250. [French and Spanish summaries. Authors' English summary modified.] **2166**

Sonic vibration of cells of peritoneal exudates or spleen homogenates from sensitized donor g. pigs yields an extract which will passively transfer tuberculin hypersensitivity to normal animals.

ALBERTINI, A. V., METAXAS, M. N. & METAXAS-BÜHLER, M. (1956). Über das gleichzeitige Einsetzen von Allergie und Tuberkelbildung bei der Meerschweinchen-tuberkulose. [Simultaneous commencement of allergy and tubercle formation in TB. in g. pigs.]—*Schweiz. Z. allg. Path.* **19**, 1-13. [English and French summaries.] **2167**

G. pigs were tuberculin tested at intervals after infection, and were killed at the first reaction. The commencement of tuberculin allergy coincided with the formation of tubercles, regardless of the route of infection or the size of the infecting dose.—R.M.

PROKHOROV, A. V. (1955). [Practical measures for the eradication of avian tuberculosis.]—*Veterinariya, Moscow.* **32**, No. 11, pp. 40-41. [In Russian.] **2168**

Young birds must be hatched only from eggs laid by healthy hens and be reared away from adult birds. In spring, after tuberculin testing and elimination of reactors, all birds are moved to summer premises. The winter premises must be thoroughly dried, cleaned and disinfected; the floor soil is taken up, and replaced by sand and wood shavings. The runs must be cleaned, and any holes in which water could collect filled in. In autumn, the young birds should be tuberculin tested before being brought back to winter quarters. Feeding and drinking vessels must be constructed so that the contents cannot be soiled by droppings. Rats and mice must be eliminated.—A. MAYR-HARTING.

ŠIMEK, A., FRANC, Z., ŠTĚDRA, H. & HAIŠ, I. M. (1955). Antituberkulózní faktor mléka (Předběžné sdělení.) [The antituberculous factor of milk.]—*Čsl. Hyg. Epidemiol. Mikrobiol., Immunol.* **4**, 124-127. [In Czech.] **2169**

The authors studied the tuberculostatic effect of dietary milk or whey in experimentally infected mice. Controls died within 28 days, whereas those given milk or whey survived up to 40 days. Losses in body wt. were markedly higher in controls. The tuberculostatic factor was heat- and acid-resistant and passed through a cellophane membrane. Its growth-inhibiting qualities were demonstrated in cultures.—E.G.

NYKA, W. (1956). **Enhancement of resistance to tuberculosis in mice experimentally infected with *Brucella abortus*.**—*Amer. Rev. Tuberc.* **73**, 251-265. [French and Spanish summaries. Author's English summary modified.] **2170**

Mice inoculated with *Br. abortus* are more resistant to tubercle bacilli than control mice. The avirulent Strain 19 gives better protection than the virulent Strain 2308. The route of injection greatly influences the degree of resistance. The mechanism by which this resistance is brought about is not known, but it is postulated that growth of the tubercle bacilli is inhibited by the phagocytes of the *Brucella*-infected mice.

NASSAL, J. (1956). Experimenteller Beitrag zur unterschiedlichen Chemoresistenz der Tuberkelbakterien. [Differential resistance in vitro of human, bovine and avian type tubercle bacilli, to disinfectants.]—*Tierärztl. Umsch.* **11**, 54-57. **2171**

Avian type tubercle bacilli were more resistant than bovine type to the action of 1% and 3% formaldehyde soln. or "sigambol A" (a mixture of glycols). Human type bacilli were less resistant than bovine. The resistance of different strains within each group was also variable. When testing disinfectants, it is therefore important to choose a strain having uniform resistance and virulence.

—R.M.

FRANCIS, J. (1956). **The behavior of various mycobacteria in the chick and duck embryo.**—*Amer. Rev. Tuberc.* **73**, 276-290. [French and Spanish summaries. Abst. from author's summary.] **2172**

Human, bovine and avian types of tubercle bacilli, vole acid-fast bacilli, and rat leprosy bacilli were used. Virulent mammalian strains produced pock-like lesions on the chorio-allantois and a vigorous cellular reaction. Contrary to some previous observations, bovine type bacilli were slightly more virulent than human type and it was not

possible to distinguish between the lesions produced by these two types. It was confirmed that differences of virulence within one type of tubercle bacilli could be detected. Virulent avian type bacilli produced much smaller macroscopic lesions than mammalian type.

When inoculated intravenously, avian bacilli were less pathogenic to chick embryos than the bovine type, bacilli although they multiplied more, this confirming that they were less toxic.

Virulent vole acid-fast bacilli produced similar macroscopic changes to avirulent mammalian tubercle bacilli and greater changes than virulent avian bacilli. They produced more severe histological changes than avirulent mammalian or avian types, and, as with avian bacilli, the cytoplasm of epithelioid cells became stuffed with vole bacilli. Inoculation of the chorio-allantois with large numbers of rat leprosy bacilli produced a picture similar to that following inoculation with avian tubercle bacilli, but the bacilli did not multiply.

LING SUN CHU. (1955). **Rapid method for cultivation of acid-fast bacilli** — *Science*. **122**, 1189-1190. **2173**

A 24-hour sputum specimen is homogenized, decontaminated with NaOH, neutralized and incubated with an equal quantity of medium for 24 hours. The medium contains additions of human plasma, lecithin and penicillin. The sediment after centrifuging is stained by the Ziehl-Neelsen method. If the result is negative, 14 smears of the sediment are made on sterile slides; these are dried and immersed in a second medium in which the plasma is replaced by blood. One slide is stained and examined daily. By this method results were obtained in an average of 2.5 days and more positive results were recorded than when the American Trudeau Society medium was used.—A. SEAMAN.

YAMAGUCHI, M., KAWANISHI, Y., AZUMA, R. & TAKASUGI, T. (1955). **Suspected Johne's disease in imported cattle**.—*Exp. Rep. nat. Inst. Anim. Hlth, Tokyo*. No. 30, pp. 1-12. [In Japanese and English.] **2174**

Three imported (U.S.A.) heifers which had reacted mildly to the johnin intradermal test were subjected to laboratory examination before and after death but no evidence of Johne's disease was found.

—M. B. HAWKSLEY.

CHANDLER, R. L. (1956). **A preliminary note on a micro-complement-fixation test for Johne's disease**.—*Vet. Rec.* **68**, 4-6. **2175**

The preparation of the antigen and the test procedure were described in detail. By comparison, this test was shown to be at least as accurate as Höle's c.f. test [*V.B.* **24**, 1777] besides being quicker and easier.—M.G.G.

GAINULLIN, T. R. (1955). **[Treatment of cattle with paratuberculous enteritis (Johne's disease)]**.—*Veterinariya, Moscow*. **32**, No. 11, pp. 27-29. [In Russian.] **2176**

G. claimed to have cured Johne's disease in cattle with sulphanthol, and disulphan. The best results were obtained with a combination of sulphanthol and disulphan. The treated animals gained in weight, became negative to the allergic test with avian tuberculin, and the blood picture became normal.

—A. MAYR-HARTING.

BULLING, E. (1956). **Die Behandlung der Pyogenes-Mastitis mit Terramycin. [Treatment of *C. pyogenes* mastitis with terramycin.]** — *Dtsch. tierärztl. Wschr.* **63**, 93-97. **2177**

Quarters of the udders of 9 cattle were experimentally infected with *Corynebacterium pyogenes*. Recovery did not bring about immunity to further infection. The condition responded favourably to the instillation of oxytetracycline, which eliminated infection in all cases, except for one very severely infected quarter. Oxytetracycline ointment was found to be superior to tetracycline in aq. soln.

—M.G.G.

ENGLERT, H. K. (1956). **Otitis und Kopfschiefhalten der Jungschweine. [Corynebacterial otitis in young pigs.]** — *Tierärztl. Umsch.* **11**, 39-42. **2178**

It is suggested that this disease is provoked by a deficiency of vitamins A and D.

—M.G.G.

MORTELMANS, J., DE KEYSER, J. & FASSEAUX, P. (1955). **Opmerkingen bij de Varkensvlekziekte in Katanga. [Swine erysipelas in Katanga, Belgian Congo.]** — *Bull. agric. Congo belge*. **46**, 1105-1112. [In Flemish. Abst. from French summary.] **2179**

Two outbreaks of subacute swine erysipelas in the Province of Katanga were confirmed bacteriologically, two different strains of organism being identified. Penicillin treatment effected cure in a few days.

—T.E.G.R.

NISHIMURA, Y., SATO, U. & WATANABE, M. (1954). [Experimental infection of pigs with *Erysipelothrix rhusiopathiae*.] — *Jap. J. vet. Sci.* **16**, Suppl. pp. 3-4. [In Japanese. English title pp. 175-176.] **2180**

A highly virulent strain from a naturally infected pig was used for the scarification test on the abdomen. Individual pigs varied in their susceptibility; some remained healthy.

—KOGI SAITO.

I. GOUGE, H. E., BOLTON, R. & BROWN, R. (1956). Laboratory studies on erysipelas. II. Use of various cultures in production of infection in pigs by skin scarification.—*Amer. J. vet. Res.* **17**, 132-134. [Authors' summary modified.] **2181**

II. GOUGE, H. E., BOLTON, R. & ALSON, M. C. (1956). Laboratory studies on erysipelas. III. Duration of immunity in pigs vaccinated with adsorbed bacterin, and with serum and culture.—*Ibid.* 135-139. [Abst. from authors' summary.] **2182**

I. *E. rhusiopathiae* cultures from 5 sources were administered to susceptible pigs by skin scarification. Clinical symptoms and febrile and cutaneous reactions were recorded. The Shuman strains produced the most marked reactions and the Shuman classification method was readily applied.

II. A total of 154 young pigs were vaccinated either with culture and serum at the recommended dosages of 0.5 ml. and 10 ml., with one 5 ml. dose of an adsorbed killed culture vaccine, or with 2 doses of the vaccine with an interval of one month between doses. Vaccinated pigs and 63 unvaccinated controls were challenged by the skin scarification method 2 months later and at monthly intervals until they were 6½ months old. Immunity was assessed by cutaneous reactions, temperature rise, and stiffness. Results were examined statistically. In all cases, better results were obtained with one dose of killed culture vaccine than with live culture and serum, but 2 doses of the killed vaccine yielded the best results.

KUCSERA, G. (1956). Ibolyántúli sugarak hatására sertésorbánc elleni szérumok védőértékére. [Effect of ultra-violet irradiation on immunizing capacity of swine erysipelas serum.]—*Mag. állator. Lapja.* **11**, 47-52. [In Hungarian. English and Russian summaries. Abst. from English summary.] **2183**

Protection tests in mice and electrophoresis showed that ultra-violet irradiation

diminished the immunizing power of the serum. The diminution varied directly with the length of exposure; it was greater with a high-pressure than with a low-pressure mercury vapour lamp; and it was greater in horse serum than in pig serum. It is considered that irradiation with a low-pressure lamp for 1-5 min. is suitable for the sterilization of immune serum prepared in pigs.

—T.E.G.R.

ATTLEBERGER, M. H. & SEIBOLD, H. R. (1956).

Listeria infection of bovine mesenteric lymph nodes.—*J. Amer. vet. med. Ass.* **128**, 202-204. [Authors' summary modified.] **2184**

Two cases were described. In both, *Erysipelothrix (Listeria) monocytogenes* was isolated from the mesenteric lymph nodes. In one, there was also typical listeriosis of the c.n.s. The other was a case of arsenic poisoning with *Listeria* infection of the mesenteric lymph nodes but not of the c.n.s.

GAVRICHENKOV, A. I. (1955). [*Erysipelothrix (Listeria) monocytogenes* infection in pigs.]—*Veterinariya, Moscow.* **32**, No. 11, pp. 34-35. [In Russian.] **2185**

In an outbreak in pigs of all ages with a mortality of 20.4%, symptoms caused by damage to the c.n.s. were particularly pronounced in pigs 2-4 months old. The organism was isolated from the organs of the pigs, and of lab. animals inoculated with pig organ suspensions.—A. MAYR-HARTING.

YAW, K. E., BRIEFMAN, L. & KAKAVAS, J. C. (1956). A comparison of virulence for mice and chickens of different colonial variants of the three serological types of *Pasteurella multocida*.—*Amer. J. vet. Res.* **17**, 157-159. [Authors' summary modified.] **2186**

The virulence of the same colonial variant of the 3 serological types of *Past. septica* differed in some instances in chicks and in mice. The encapsulated variants of all 3 types were highly virulent for mice, but only Type 1 was virulent for chicks. There was no cross protection in chicks immunized with Types 2 or 3 against virulent Type 1.

STAMATIN, N., ȚAGA, M. & GOGOȘĂ, V. (1955). Cercetări asupra valorii imunogene a tulpinilor de *Pasteurella* în raport cu conținutul lor în produși toxici alcalisolubili. [Immunizing value of strains of *pasteurella* in relation to their content of alkali-soluble toxic products.] — *Anu. Inst. Pat. Igien. anim.*,

București. 5, 139-144. [In Roumanian. French and Russian summaries.] **2187**

Adsorbed vaccines prepared from 6 pasteurilla strains of avian origin produced immunity in 25-90% of mice to subsequent challenge with 10 m.l.d. of avian culture, whereas vaccines prepared from 5 mammalian strains failed to protect them against mammalian culture. It is stated that there was no direct relationship between immunizing capacity and the content of alkali-soluble toxic substances, nor was there a relationship between antigenic value and virulence in the avian strains.—E.G.

GENEIDY, A. A. (1955). The development of a new method for preparing haemorrhagic septicaemia vaccine for animals in Egypt.—J. Egypt vet. med. Ass. January, pp. 32-39. [In English.] **2188**

Non-haemolytic *Pasteurella* strains of avian, equine and bovine, and rabbit origin were grown on hormone broth media, treated with 0.2% formol, and pooled in the proportions 25%, 50%, 25%. The vaccine contained 800 million organisms per ml. and in doses of 0.5 ml. protected rabbits against a maximum of 100 m.l.d. of a virulent strain of *Past. septica* from cattle, whilst 3-5 ml. protected calves and produced no side effects.

—A. ACKROYD.

GORANOFF, G. I. & MITEFF, G. (1956). L'action thérapeutique de la dihydrostreptomycine dans le traitement de la pasteurellose expérimentale du cheval et du lapin. [Dihydrostreptomycin in treatment of experimental pasteurella infection.]—Bull. Off. int. Epiz. 45, 125-129. **2189**

All of 5 horses recovered from pasteurella infection when treatment began not later than 9 hours after inoculation, at the dosage rate of 4-5 mg. of dihydrostreptomycin/kg. body weight injected every 4 hours. Rabbits recovered when treatment began not later than one hour after infection, at the dosage rate of 10 mg./kg. every 4 hours.—M.G.G.

MAHONEY, M. & ARMSTRONG, W. H. (1955). Acute pseudomonas mastitis—a case report.—Calif. Vet. 8, No. 4, p. 23. **2190**

The authors demonstrated that a farm's water supply was contaminated with *Ps. pyocyanea*. They suggested that mastitis in a cow caused by this organism was the result of washing milking equipment with the contaminated water.—R.M.

BOKKENHEUSER, V. & RICHARDSON, N. (1955). Observations on the use of dried *Salmonella* antigens.—Leeuwenhoek ned. Tijdschr. 21, 239-246. [In English.] **2191**

The authors employed a technique described by Anderson, G. G. (1953), for the mass production of *S. typhi* antigen. The antigen was dried by the evaporation of a suspension of the killed organisms in ether. When rehydrated the antigen was suitable for the agglutination test, although the flagellar antigen was destroyed during the drying process.—R.M.

GILFILLAN, R. F., HOLTMAN, D. F. & ROSS, R. T. (1955). A synthetic medium for propagation and maintenance of virulent strains of *Salmonella pullorum*.—Poult. Sci. 34, 1283-1288. [Authors' summary modified.] **2192**

Growth of *S. pullorum* in several complete and synthetic liquid media was compared. A synthetic medium devised by Shoenhard & Stafseth [*V.B.* 24, 2249] was modified to include an increased concentration of potassium phosphate plus nicotinic acid, xanthine, serine, alanine, glycine and potassium bicarbonate. The time required to attain maximum growth was 36 hours as opposed to 60 hours with the unmodified medium. Infectivity of the experimental strain was maintained as readily as by animal passage.

GERRIETS, E. (1955). Experimentelle Therapieversuche bei der *S. pullorum*-infektion der Küken mit Aureomycin ad us. vet. [Aureomycin treatment of *Salmonella pullorum* infection in chicks.]—Arch. Geflügelk. 19, 421-424. [English summary.] **2193**

Aureomycin, 150 mg. per kg. food was administered to 100 chicks infected experimentally with virulent *S. pullorum*. 100 chicks served as infected and another 100 as uninfected controls. The mortality was 92 in the untreated controls and 79 in the aureomycin treated group. These results indicated that the dosage used was too low for a heavy *S. pullorum* infection.—W. G. SILLER.

SIEIRO, F. (1956). Studies on vaccination and revaccination for bovine brucellosis.—Amer. J. vet. Res. 17, 36-39. [Author's summary modified.] **2194**

A group of calves was vaccinated at 10 months of age, a second group at 10 months and again at 18 months and a third group was vaccinated once at 18 months. After exposure, all vaccinated animals showed less infection than unvaccinated controls, but results were

better in the revaccinated and late vaccinated groups. The results of late vaccination confirmed the author's observations in the field.

NEWTON, J. W., WILSON, J. B. & WILSON, P. W. (1955) **Nucleotides and nucleic acid synthesis by *Brucella abortus*.**—*J. Bact.* **69**, 677-681. **2195**

Five nucleotides (characterized as the 5/ monophosphates of cytosine, adenine, guanine and uracil) were obtained from cold acid extracts of *Br. abortus*. A further nucleotide (tentatively identified as uridine diphosphate glucose) was found. The turnover of C¹⁴ in free intracellular 5/ nucleotides was more rapid than in constituents of nucleic acid. This seems to suggest that in *Br. abortus* the nucleic acids are derived from nucleotides.

—T.E.G.R.

ORLANDELLA, V. (1955). Ricerche sull'influenza del desossicorticosterone acetato sulla produzione delle agglutinine brucellari. [**Effect of desoxycorticosterone acetate on the production of brucella agglutinins.**]—*Nuova Vet.* **31**, 85-86. **2196**

In experiments on 20 rabbits treatment with desoxycorticosterone acetate had no effect on the production of antibodies to *Br. abortus*.

—I. W. JENNINGS.

SAZHIN, S. G. (1955). [**Value of Koslov's stain for smears in the diagnosis of brucellosis.**]—*Sborn. nauch. Trud. Leningr. Inst. Usov-ershenst. vet. Vrach.* **10**, 198-199. [In Russian.] **2197**

Examination of smears stained by the method described by Kozlov (safranin followed by methylene blue, malachite green or brilliant green) gave results very similar to those obtained by cultural methods and g. pig inoculation.—R.M.

FLÜCKIGER, G. (1956). Über die Bekämpfung der Schaf- und Ziegenbrucellose in der Schweiz. [**Control of brucellosis of sheep and goats in Switzerland.**]—*Schweiz. Arch. Tierheilk.* **98**, 97-102. **2198**

Since the outbreak in 1950 [see *V.B.* **24**, 1021], brucellosis did not occur again in sheep and goats in Switzerland until March 1955, when an outbreak affected both animals and human beings. Affected flocks were slaughtered and since November no further cases had been reported.

F. quoted the official instructions for the diagnosis of brucellosis in sheep and goats; 0.2 ml. of a heat-killed bacterial suspension is

injected i/d into the caudal fold or lower eyelid; a swelling at the point of injection 3 days later is regarded as a positive reaction. A flock with more than 15% positive reactors is to be considered as infected.—M.G.G.

JACOTOT, H. & VALLÉE, A. (1956). Sur un critère du pouvoir pathogène des brucelles. [**A criterion for the pathogenicity of brucella.**]—*Ann. Inst. Pasteur.* **90**, 121-126. [Abst. from English summary.] **2199**

A relation exists between the natural pathogenicity of a brucella or its virulence for the animal species from which it has been isolated, and the persistence of the septicaemia which it causes in g. pigs after s/c inoculation.

SCHINDLER, R. (1955). Untersuchungen über die Differenzierung von Brucellatypen. [**Typing of *Brucella*.**]—*Vet.-Med. Nachr.* No. 3. pp. 155-166. [Summaries in Suppl. No. 3/1955. English summary p. 5; French summary p. 12; Spanish summary p. 18.] **2200**

Of 55 strains of brucella typed by determination of carbon dioxide requirements, fuchsin and thionin resistance and type-specific agglutination, 29 were typical *Br. abortus*, 12 *Br. suis* and 4 *Br. melitensis*. The remaining 5 *Br. abortus* and 5 *Br. melitensis* strains gave atypical reactions with one or the other differentiation method. Details are given of evaluation tests of typing methods using 13 selected strains.—E.G.

I. SWAIN, R. H. A. (1955). **Electron microscopic studies of the morphology of pathogenic spirochaetes.**—*J. Path. Bact.* **69**, 117-128. **2201**

II. CZEKALOWSKI, J. W. & EAVES, G. (1955). **The structure of leptospira as revealed by electron microscopy.**—*Ibid.* **129-132.** **2202**

I. The results of electron microscopic studies of *L. icterohaemorrhagiae* and other spirochaetes are well illustrated by a number of photomicrographs.

II. The leptospira consists of a cytoplasmic cylinder enclosed in a membrane and an axistyle. The latter lies outside and in close contact with the enveloping membrane and penetrates the protoplasm towards each end forming end-knobs (possibly basal granules or blepharoplasts). It is suggested that the axistyle may be the means of locomotion of the leptospira. The specimens studied were *L. icterohaemorrhagiae*, *L. canicola* and *L. leeds* and are illustrated in photomicrographs.

—T.E.G.R.

FARINA, R. (1955). Sulla diffusione delle leptospirosi animali in Toscana. (Indagini preliminari). [**Incidence of leptospirosis in animals in Tuscany.**]—*Arch. Vet. Ital.* **6**, 485-492. [English, French, German and Spanish summaries. Abst. from English summary.] **2203**

Serological studies were made on blood samples from dogs, cattle, sheep, pigs and horses. On the basis of the agglutination-lysis test the highest proportion of positive reactions was observed in dogs (30 out of 97, i.e., 22 with *L. icterohaemorrhagiae* and 8 with *L. canicola*). In cattle only 11 out of 506 sera were positive. Significant titres to *L. icterohaemorrhagiae*, *L. sejroe* and *L. saxkoebing* were found.

SAFAROV, K. M. (1955). [Effect of external factors on the incidence and spread of leptospirosis, with reference to conditions in Azerbaijan.]—*Veterinariya, Moscow.* **32**, No. 8, pp. 33-36. [In Russian.] **2204**

Leptospira can survive and multiply in the mountain pasture regions where rainfall is heavy, streams do not dry up, and the soil is poor in carbonates and salts and retentive of moisture. They do not survive in the lowland regions where semi-desert conditions prevail in summer and the soil is rich in salts: here the incidence of leptospirosis is low, cases occurring only in autumn when the cattle from the mountains have been driven down.

—A. MAYR-HARTING.

REID, C. H. & MCINTYRE, R. W. (1955). A serological survey in horses for leptospirosis associated with suspect clinical cases.—*Calif. Vet.* **8**, No. 4, pp. 20-22. **2205**

An account of leptospira infection in 3 horses, 2 of which died. A serological survey of 23 horses in the same district revealed that antibodies against 8 species of *Leptospira* were present in a small proportion of the horses.

—R.M.

KAWASHIMA, H., YANAGAWA, R. & HIROTA, E. (1954). [Studies on bovine leptospirosis. I. Epizootiological observations in Japan.]—*Jap. J. vet. Sci.* **16**, Suppl. pp. 64-65. [In Japanese. English title p. 187.] **2206**

A serological survey in 3 villages revealed 5 cattle positive for both *L. hebdomadis* and *L. icterohaemorrhagiae*, one strongly positive for both *L. hebdomadis* and *L. australis* A, one strongly positive and 3 with very low titres for *L. bovis*. Two strains of *L. hebdo-*

madis A were isolated from the urine of 2 cattle with high fever and haemoglobinuria. Five of the cattle had aborted.—KOGI SAITO.

GERLACH, F. (1956). Leptospirose-Meningitis bei Rindern. [**Leptospiral meningitis in cattle.**]—*Wien. tierärztl. Mschr.* **43**, 65-77. [English, French and Italian summaries.] **2207**

A disease of cattle in European Turkey, which has been prevalent for at least 20 years, is characterized by sudden onset and incoordination of movement, followed by decubitus and death. Jaundice and fever are absent. G. found that the principal pathological change was serous meningitis, and he observed leptospira in smears of the meninges and the c.s.f. Three strains isolated from affected cattle were *L. pomona*.—R.M.

DELAY, P. D., DALEY, R. & CALLAHAN, C. (1955). Leptospirosis in relation to porcine abortion.—*Calif. Vet.* **8**, No. 4, pp. 36-37. **2208**

A brief account of abortion in 3 herds of pigs, associated with *L. pomona* antibodies in the blood of the sows. Attempts to isolate the organism from aborted fetuses were unsuccessful.—R.M.

KMETY, E. (1955). Zur Serodiagnostik und Epidemiologie der Australis-B-Leptospirosen. [**Serological diagnosis and epidemiology of *L. australis* B infection.**]—*Zbl. Bakt. I. (Orig.)* **163**, 398-406. [English, French and Russian summaries.] **2209**

In Czechoslovakia *L. australis* B infection was diagnosed in 16 human beings during 1953-54. Some of these had had contact with pigs which might have been infected. In one village field mice appeared to be the source of infection.—R.M.

LAURAIN, A. R. (1955). Lesions of skeletal muscle in leptospirosis. Review of reports and an experimental study.—*Amer. J. Path.* **31**, 501-519. **2210**

L. described focal damage in isolated fibres of skeletal muscle in dogs and rats with natural leptospirosis. Lesions resembled those in human *L. icterohaemorrhagiae* infection (Weil's disease). Experimental production in g. pigs and hamsters by infection with *L. canicola* failed. The diagnostic value and specificity of these lesions are discussed. Whether or not these lesions are present in man or animals infected with leptospira other than *L. icterohaemorrhagiae* has, so far, not been established.—E.G.

ALEXANDER, A. D., SMITH, O. H., HIATT, C. W. & GLEISER, C. A. (1956). **Presence of hemolysin in cultures of pathogenic leptospirae.**—*Proc. Soc. exp. Biol.*, N.Y. **91**, 205-211. [Authors' summary modified.] **2211**

A serotype strain, recently isolated from a human patient in Malaya has been designated *Leptospira hemolyticus*. The presence of a soluble non-dialysable, thermolabile, oxygen-stable haemolysin in the supernatant fluid of cultures was demonstrated. The optimum temp. for haemolytic activity was 37°C. At lower temperatures the activity progressively decreased. The haemolytic activity against sheep r.b.c. occurred after a prolonged induction period. This phenomenon as well as the atypical kinetic activity of varying concentrations of haemolysin preparations were attributed to the inhibitory activity of the rabbit serum present in culture supernatants. Production of haemolysin was not a generic characteristic but was restricted to specific serotype strains. Haemolytic activity was demonstrated against sheep, cow and goat r.b.c., but not against r.b.c. of 11 other species. The antigenicity of this haemolysin could not be demonstrated. In actively growing cultures, maximum amounts were produced 1 to 3 days following optimum growth. The presence of a soluble haemolysin in specific serotype strains may be of importance in explaining the pathogenicity of leptospiral infections.

KIRSCHNER, L. & MAGUIRE, T. (1955). **Anti-leptospiral effect of milk.**—*N. Z. med. J.* **54**, 560-564. **2212**

Human, cows' and goats' milk, and human colostrum contained a factor producing lysis in cultures of virulent and avirulent strains of *Leptospira*. It is stated that this lytic factor was not identical with lysozyme, since lysozyme present in egg white, saliva and tears had no effect on *Leptospira*. The presence in milk of this factor may explain the absence of milk-borne human infection in countries where there is a high incidence of bovine leptospirosis.—E.G.

ADLER, M. V. (1956). **Studies on the effects of six antibiotics on *Leptospira canicola*.**—*Thesis, Cornell*. pp. 49. **2213**

An evaluation of the action of bacitracin, chloramphenicol, dihydrostreptomycin, polymyxin B, oxytetracycline and tetracycline against *L. canicola* *in vitro*, and in hamsters. *In vitro*, dihydrostreptomycin, polymyxin B,

oxytetracycline and tetracycline were slightly more effective than chloramphenicol. All were much more effective than bacitracin. *In vivo*, dihydrostreptomycin was the most effective.

—H. L. GILMAN.

GOLDBERG, H. S. & LOGUE, J. T. (1956). **Antibiotic sensitivity of *Leptospira* as indicated by loss of motility.**—*Antibiot. & Chemother.* **6**, 19-22. [Spanish summary pp. 75-76.] **2214**

The action of antibiotics on 4 species of *Leptospira* were assessed by observing their motility after being in contact with a soln. of each antibiotic for 6 hours at 30°C. The percentage of motile organisms after exposure to from 1 to 100 µg./ml. penicillin or tetracycline never fell below 25% with the former and 15% with the latter. With thiolutin at 60 µg./ml. less than 1% remained motile. The authors raised the question of whether non-motile leptospira were dead or still alive.

—R.M.

PRÉVOT, A. -R., LEVADITI, J. & TARDIEUX, P. (1956). Étude d'une enzootie ovine d'hépatite nécrasante foudroyante due à l'association *Welchia perfringens* — *Clostridium septicum*. [Outbreak of acute necrotic hepatitis in sheep caused by *Cl. welchii* and *Cl. septicum* combined.] — *C. R. Acad. Sci., Paris.* **242**, 1544-1547. **2215**

During an outbreak of necrotic hepatitis among 360 sheep, 80 died. *Cl. welchii* and *Cl. septicum* were consistently isolated from dead sheep, and a mixture of these organisms set up a fatal disease in g. pigs, characterized by haemorrhagic oedema and necrotic hepatitis.—R.M.

SHAT'KO, P. D. & KORNILOVA, A. L. (1955). [Some data on the survival of *Cl. chauvoei* spores in the soil.] — *Veterinariya, Moscow.* **32**, No. 7, pp. 76-79. [In Russian.] **2216**

The carcasses of g. pigs killed by infection with *Cl. chauvoei* were buried in two different types of soil. The places were doubly fenced in, surrounded with a ditch of chlorinated lime and left undisturbed for 5 years. After that time, numerous cultural and animal inoculation tests, using the bones of the g. pigs, soil from various depths, and vegetation, failed to reveal *Cl. chauvoei*.

—A. MAYR-HARTING.

WOHANKA, K. (1956). Kritische Bemerkungen zur Frage der Vibriosis genitalis in Rinderbesamungsringen Mitteldeutschlands. [*Vibrio fetus* infection in some artificial insemination

centres in Germany.]—*Mh. VetMed.* **11**, 101-105. **2217**

The belief that increased incidence of sterility amongst cattle has been caused by *V. fetus*-infected semen from A.I. centres is criticized. Nutritional factors and brucellosis are suggested.—M.G.G.

VOIGT, A. (1955). Über eine kulturelle Methode zur Isolierung von *Vibrio fetus* aus genitalen Sekreten männlicher und weiblicher Rinder. [Cultural method for the isolation of *V. fetus* from genital secretions of bulls and cows.]—*Zbl. Bakt. I. (Orig.)* **164**, 103-105. **2218**

B. cultivated samples for 3 days on liver broth in an atmosphere containing 10-15% CO₂ at 20 mm. Hg. pressure. He gave details of a technique for obtaining samples.

—R.M.

KAWASHIMA, H., IWATA, A. & SUZUKI, Y. (1954). [Studies on vibriosis in cattle. Experimental studies. I. Experimental *V. fetus* infection in laboratory animals.]—*Jap. J. vet. Sci.* **16**, Suppl. pp. 29-30. [In Japanese English title p. 180.] **2219**

Mice, g. pigs and rabbits were inoculated with *V. fetus* by various routes. In non-pregnant animals the organism disappeared in a short time from the organs; in pregnant animals it multiplied luxuriantly in the uterus and survived for a long time. In the testicle, it survived for a long time.—KOGI SAITO.

BIBERSTEIN, E. L. (1956). Serological variants among strains of *Vibrio fetus*.—*Cornell Vet.* **46**, 144-165. [Author's summary modified.] **2220**

Cross-agglutination tests were carried out on 56 *Vibrio* strains of ovine and bovine origin and 51 prepared antisera.

Apart from *V. percolans*, 6 individual serological types were found; 4 comprised catalase-positive strains, accounting for 47 cultures, and 2 comprised catalase-negative strains. Of the 47 catalase-positive isolates, 44 belonged to one major serological type, within which considerable serological variation was observed. Extraction procedures, using varying degrees of heat, acidity, alkalinity, and sonic vibration, failed to destroy type specificity whether tested for by complement-fixation, indirect haemagglutination, or precipitation techniques.

REICH, C. V., MORSE, E. V. & WILSON, J. B. Gaseous requirements for growth of *Vibrio fetus*.—*Amer. J. vet. Res.* **17**, 140-143. [Authors' summary modified.] **2221**

Carbon dioxide at a concentration greater than that usually present in air is not essential to the growth of *V. fetus*. Forty-two strains tested responded with considerably better growth to a microaerophilic environment containing 6% oxygen than to an air environment containing 10% carbon dioxide. The conc. of oxygen was lowered by using helium or nitrogen, as diluent, rather than carbon dioxide which was unfavourable at high concentrations. Many strains were apparently sensitive to hydrogen, giving increased yields in its presence. The ability to reduce buffered methylene blue in the presence of hydrogen but not helium was demonstrated in 24 of the 42 strains. It was possible to divide the organisms into 3 categories. Vibrios isolated from bovine semen or vaginal mucus were catalase negative as compared with the remainder.

Ovine and bovine abortion isolates could be divided according to the amount of growth in air at a pressure of 24 mm. of mercury and in nitrogen at 676 mm.; with standardized inocula, ovine strains produced visible growth, while bovine strains did not.

JANOWSKI, H. (1956). Z badań nad zakaźnym zapaleniem żołądka i jelit u świń w Polsce. [Infectious porcine gastro-enteritis in Poland, possibly caused by a vibrio.]—*Méd. vét., Varsovie.* **12**, 16-21. [In Polish. English and Russian summaries.] **2222**

A further account of outbreaks already described [*V.B.* **26**, 52]. The outstanding symptoms were a rapidly spreading diarrhoea and loss of condition. Haemorrhagic gastritis, thickening of the wall of the colon and diphtheritic deposits on its mucous membrane were the usual P.M. findings; myocardial degeneration was noted in some cases. Animal inoculation tests eliminated the possibility of a virus infection and *Vibrio suis* was isolated. The condition was set up in 3 out of 4 pigs by oral administration of portions of large intestine having typical lesions. Transport, or sudden changes of diet are considered to be predisposing factors in field outbreaks.—M. GITTER.

KUJUMGIEV, I. (1955). Sulla eziopatogenesi dell'epatite necrotizzante nodulare degli agnelli. [Aetiology and pathogenesis of necrotic nodular hepatitis in lambs.]—*Zooprofilassi.* **10**, 671-674. **2223**

Nodular necrosis of the liver was diagnosed P.M. in lambs slaughtered in the course

of contagious pustular dermatitis. *Fusiformis necrophorus* was isolated from the liver lesions.—T.E.G.R.

I. DÉOM, J. & MORTELMANS, J. (1955). De la sensibilité *in vitro* de quelques microorganismes d'origine animale à la viomycine. [Sensitivity *in vitro* of some micro-organisms of animal origin to viomycin.] — *Leeuwenhoek ned. Tijdschr.* 21, 377-381. [English summary.] 2224

II. DÉOM, J. & MORTELMANS, J. (1955). De la sensibilité *in vitro* de quelques microorganismes d'origine animale à la néomycine. [Sensitivity *in vitro* of some micro-organisms of animal origin to neomycin.] — *Ibid.* 382-384. [English summary.] 2225

I. & II. Out of 67 strains of *Salmonella*, *Chromobact. prodigiosum*, *Str. zooepidemicus*, *Str. agalactiae*, *Staph. pyogenes*, *B. anthracis* and *E. rhusiopathiae*, isolated from animals in the Belgian Congo, all except the latter organism were inhibited by neomycin (0.012-3.1 µg./ml.). The only organisms inhibited by viomycin (1.56-25 µg./ml.) were *B. anthracis* and some strains of *Salmonella*. —R.M.

CZARNOWSKI, A. (1956). Drożdżycza płuc u norek. [Pulmonary blastomycosis in mink.] — *Méd. vét., Varsovie.* 12, 24-25. [In Polish.] 2226

An account of an outbreak in which mink were dying with or without symptoms of pulmonary distress. P.M. examination revealed numerous greyish-white nodules in the lungs resembling lesions of TB. but softer. No acid-fast organisms were found. The condition was reproduced by inoculating g. pigs [route not stated] with material from mink lungs. A fungus classified as a member of the group Ascomycetes was isolated from the lesions of both mink and g. pigs. Attempts to infect g. pigs with a culture of the fungus on 3-4% glucose agar were unsuccessful.

—M. GITTER.

SIMON, J. & HALL, R. (1955). An outbreak of bovine mycotic mastitis associated with dry storage of teat cup inflations.—*J. Milk Tech.* 18, 298-299. 2227

Mastitis in 4 out of a herd of 31 cows did not respond to treatment with antibiotics, and yeasts were present in the milk. Fungi resembling *Candida* were isolated from rubber teat-cup linings which had been stored (presumably between milkings) in a dry state. Subsequent to this finding, the linings were kept

in 0.5% lye instead of being kept dry, and no fresh cases of the mastitis occurred.—R.M.

DROUHET, E., SCHWARZ, J. & BINGHAM, E. (1956). Evaluation of the action of nystatin on *Histoplasma capsulatum* *in vitro* and in hamsters and mice.—*Antibiot. & Chemother.* 6, 23-35. [Spanish summary p. 76. Abst. from authors' English summary.] 2228

Nystatin was fungistatic *in vitro* for strains of *H. capsulatum* of American and African origin. The findings indicated greater activity of nystatin in the mycelial phase. Treatment with nystatin proved of value both in hamsters and mice. Three main benefits were observed: decreased mortality; inhibited dissemination of disease and sterilization of tissue. The drug was not toxic in therapeutic dosage.

SINGH, S. (1956). Equine cryptococcosis (epizootic lymphangitis).—*Indian vet. J.* 32, 260-270. 2229

Most of the cases of *Histoplasma farciminosum* infection recorded at the Remount Depot Saharanpur since 1948 have been atypical. Instead of cording of the lymphatics and abscess formation, 176 of 188 cases have shown involvement of the eyes with at first watery and later purulent discharge and swelling of the eyelids. In a number of cases, a papule of the size of a mosquito bite developed on the conjunctiva and/or on the membrana nictitans. This became a button-like growth with an ulcerating surface whilst a diffuse swelling of the eyelids closed the eye. In severe cases there was also enlargement and suppuration of the submaxillary and parotid lymph nodes. There was no evidence of differences in breed susceptibility. The data did, however, suggest that horses and mules 6 years old and younger, contracted infection more frequently than older ones, and more cases were noted in winter than in summer. Surgical removal of the lesion followed by one or more series of 5 i/v injections at 48-hour intervals of Lugol's iodine (6, 8, 10, 12, 12, oz., respectively) resulted in up to about 80% clinical cures.—G. C. AINSWORTH.

REBELL, G., TIMMONS, H. F., LAMB, J. H., HICKS, P. K., GROVES, F. & COALSON, R. E. (1956). Experimental *Microsporium canis* infections in kittens.—*Amer. J. vet. Res.* 17, 74-78. 2230

In experimental infections of kittens with *Microsporium canis* lesions were first observed about 4 days after inoculation. They were

non-inflammatory; they increased in size for about 28 days and then began to regress. When hairs were infected, infection persisted for 6 months on the average. Infections with an atypical strain of *M. canis* which did not attack hair resolved about one month after inoculation, a pattern similar to that in experimental *Trichophyton mentagrophytes* infections of kittens. Once a *M. canis* infection was well established test infections failed to develop into large lesions, but no skin sensitivity of infected animals could be demonstrated. In g. pigs, experimental *M. canis* infections showed a stage of active development of only 15 days, but the lesions were more inflammatory than in cats, and skin sensitivity was demonstrable.

—G. C. AINSWORTH.

BALLARINI, G. (1955). *Aspergillus fumigatus* e *Rhizopus equinus* in feti da aborto bovino. [*Aspergillus fumigatus* and *Rhizopus equinus* in aborted bovine foetuses.] — *Nuova Vet.* **31**, 78-85; 117-126. **2231**

Five cases of bovine abortion occurring between the fifth and eighth month of pregnancy were attributed to fungal infection. In four, *Aspergillus fumigatus* was isolated from the fourth stomach of the foetus and in the fifth, *Rhizopus equinus*, from the same situation.—I. W. JENNINGS.

MARTINS MENDES, A. & DA GRAÇA, H. M. (1954). Estudo sobre o fenómeno de Willems. [Study of the Willems phenomenon in cattle inoculated subcutaneously with the organism of bovine contagious pleuro-pneumonia.] — *Pecuária*, (1953/54). pp. 121-132. [French summary.] **2232**

The organism was inoculated s/c into 28 calves, not previously vaccinated. The reactions were in three different forms, acute, necrotising and resistant. Four of the calves were naturally resistant to the inoculation of material fatal to the others.—I. W. JENNINGS.

MARTINS MENDES, A. (1954). Nota prévia. Subsídio ao estudo da padronização de vacinas contra a peripneumonia contagiosa dos Bovinos. [Standardization of vaccines against bovine contagious pleuro-pneumonia. Preliminary note.] — *Pecuária*, (1953/54). pp. 71-92. [English summary.] **2233**

For testing the efficiency of the vaccine, calves, 6-8 months old, are inoculated at the tip of the tail and are challenged 3-6 weeks later with 0.125 ml. of virulent culture.

—I. W. JENNINGS.

SWITZER, W. P. (1955). Studies on infectious atrophic rhinitis. IV. Characterization of a pleuropneumonia-like organism isolated from the nasal cavities of swine. — *Amer. J. vet. Res.* **16**, 540-544. **2234**

S. described the morphology and cultural properties of a pleuropneumonia-like organism isolated from the nasal cavities of healthy pigs and of pigs with atrophic rhinitis. It was not pathogenic for mice, g. pigs, a calf, a lamb, or fowls. When the organism was instilled into the nasal cavity of young or adult pigs, they became carriers of the organism, but it had no apparent pathological action. When injected i/p into piglets, fibrinous peritonitis, pleuritis, pericarditis and arthritis (a syndrome similar to Glässer's disease) frequently occurred. S. proposed the name *Mycoplasma hyorhinis* n. sp. for this organism.—R.M.

EDWARD, D. G. FF. & FREUNDT, E. A. (1956). The classification and nomenclature of organisms of the pleuropneumonia group. — *J. gen. Microbiol.* **14**, 197-207. **2235**

The authors have combined their individual proposals for the classification and nomenclature of this group. The name of the order under which they are placed is undecided: Edward suggested MOLLICUTALES and Freundt suggested MYCOPLASMATALES. The generic name chosen was *Mycoplasma*, and the following are the species of veterinary interest:— *Mycoplasma mycoides* var. *mycoides*, the cause of bovine contagious pleuro-pneumonia (type species); *M. mycoides* var. *capri*, the cause of caprine contagious pleuro-pneumonia; *M. agalactiae*, the cause of contagious agalactia; *M. bovirhinalium*, previously described as "P" strains, isolated by Edward from the genital tract of cattle [*V.B.* **20**, 1236]; *M. spumans*, *M. canis* and *M. maculosum*, are respectively the "α", "β" and "γ" strains isolated from dogs by Edward & Fitzgerald [*V.B.* **22**, 1236]; *M. gallinarum* is a species based on the examination of a strain from the upper respiratory tract of a fowl [*V.B.* **22**, 945]: its relationship to strains isolated from fowls and turkeys in the U.S.A., particularly from chronic respiratory disease, is not yet established; *M. hyorhinis* is the name proposed by Switzer [see abst. 2234] for a strain isolated from the nasal mucosa of pigs.—R.M.

BARTMANN, K. & HÖPKEN, W. (1955). Phasenkontrastmikroskopische Beobachtung.

gen zur Morphologie der peripneumonieähnlichen Organismen (PPLO). **Morphology of pleuropneumonia like organisms, studies by phase-contrast microscopy.**] — *Zbl. Bakt. I.* (Orig.) **163**, 319-332. **2236**

A detailed account, with 51 phase-contrast photomicrographs, of the morphology of 2 bovine, 2 saprophytic and 2 rat strains of PPLO.—R.M.

DOMERMUTH, C. H. & JOHNSON, E. P. (1955). **An in vitro comparison of some antibacterial agents on a strain of avian pleuropneumonia-like organisms.** — *Poult. Sci.* **34**, 1395-1399. [Authors' summary modified.] **2237**

Twelve drugs were tested *in vitro* for ability to inhibit the growth of a strain of PPLO isolated from an avian source. The drugs were active in the following order of diminishing activity: (a) carbomycin, (b) terramycin, streptomycin, furazolidone, (c)

aureomycin, chloramphenicol, (d) neomycin, and (e) penicillin. Carbomycin, terramycin, streptomycin and furazolidone killed PPLO. This strain of PPLO did not readily develop resistance to any of these 4 drugs. Drugs inactive against the agent were sulphadiazine, sulphamerazine, sulphadimidine and sulphadoxaline.

MÜNKER, W. (1955). Die aeroben Bakterien im entzündeten Eileiter des Haushuhnes. [The aerobic flora of the inflamed oviduct in fowls.]—*Inaug. Diss., Giessen*, pp. 87. **2238**

The infected oviducts of 30 fowls were examined immediately after death. From 25 aerobic bacteria were isolated in pure or mixed culture. These included *Bact. coli*, *Salmonella gallinarum*, micrococci, streptococci, *Pasteurella*, *Proteus* and *Pseudomonas*. Of these only *S. gallinarum* is important as a primary cause of salpingitis.—W. G. SILLER.

See also absts. 2339 (control of *Australorbis glabratus* by a bacillus); 2377 (avian diseases transmissible to man); 2434 (*S. typhimurium* food poisoning from eggs); 2446 (report, Netherlands); 2467 (book listeriosis).

DISEASES CAUSED BY PROTOZOAN PARASITES

LAVRENTIEV, P. A. (1955). [Control of trypanosomiasis in the Kara-Kalpak A.S.S.R.] — *Sborn. Rabot XXXVI Plenum. vet. Sect., Akad. sel'skokhoz. Nauk imeni Lenin., Moscow* 1952. pp. 248-257. [In Russian.] **2239**

Following a 3-year campaign, surra in horses in the Kara-Kalpak Autonomous Republic (Uzbekistan) was virtually eradicated. Before the campaign, an annual average of 6% of all horses were infected. Clinical examination revealed most of the infected horses during the first year, but as clin. cases were eliminated, the c.f. test was relied upon for diagnosis; examination of blood smears was less reliable than the c.f. test. Infected horses were treated with a combination of suramin and "sovarsen". All horses were given a prophylactic inj. of suramin during the 10th-20th May and again during the 20th June-5th July.—R.M.

EDWARDS, E. E., JUDD, J. M. & SQUIRE, F. A. (1956). **Responses of domestic animals to infections of *Trypanosoma vivax*, *T. congolense* and *T. brucei*.** — *Nature, Lond.* **177**, 332. **2240**

A preliminary note on infections in over 100 goats, sheep and horses. The only common feature of infection by the three trypanosomes was a fall in r.b.c. count. A severe anaemia was fatal in 6 weeks; partial recovery of the r.b.c. value delayed death till

3 months; chronic cases had an initial and a terminal drop in r.b.c. count. The cryptic infections, also, developed anaemia. Some animals had pathological changes in the lung tissue.—A. SEAMAN.

DESOWITZ, R. S. (1956). **Effect of antibody on the respiratory rate of *Trypanosoma vivax*.** — *Nature, Lond.* **177**, 132-133. **2241**

The oxygen consumption of *T. vivax* was unaffected by serum from zebu or unchallenged N'Dama cattle. When the N'Dama cattle were challenged with a strain maintained in zebu cattle their serum inhibited the oxygen consumption of a rat-adapted strain of *T. vivax*. The inhibition decreased both when the time between challenge and serum sampling increased, and when the serum was diluted. The effect was presumed to be due to antibody, particularly as it was accompanied by trypanolysis.—A. SEAMAN.

NOVINSKAYA, V. F. (1955). [The new trypanocidal preparations furacillin and antrycide.] — *Sborn. Rabot XXXVI Plenum. vet. Sect., Akad. sel'skokhoz. Nauk imeni Lenin., Moscow* 1952. pp. 258-263. [In Russian.] **2242**

N. tested the effectiveness of quinapyramine (antrycide), a mixture of 1 part quinapyramine with 10 parts suramin, and "furacillin" [composition not stated] in

trypanosomiasis in lab. animals, horses and camels. The latter preparation was a synthesized yellow powder, poorly soluble in water, and given by mouth as an aqueous suspension. The percentage of camels which recovered following treatment with these preparations was 94%, 97% and 83% respectively. The s/c administration of quinapyramine sulphate caused abscesses at the site of inj. in 40% of the horses treated, but in none of the camels or donkeys. Camels given a prophylactic inj. of quinapyramine in spring remained healthy in autumn, although 5 out of 46 untreated camels had positive blood smears. During the first 10 months after the introduction of these new preparations, the incidence of trypanosomiasis was reduced 24-fold.—R.M.

NATT, M. P. & HERRICK, C. A. (1955). **The effect of cecal coccidiosis on the blood cells of the domestic fowl. I. A comparison of the changes in the erythrocyte count resulting from hemorrhage in infected and mechanically bled birds. The use of the hematocrit value as an index of the severity of the hemorrhage resulting from the infection.**—*Poult. Sci.* 34, 1100-1106. 2243

The changes in the r.b.c. count and the haematocrit value (percentage vol. of r.b.c.) during the course of *Eimeria tenella* infection were compared with those noted in mechanically induced haemorrhage.

The r.b.c. count decreased by approx. 50% on the fifth and sixth days following the day of infection. The haematocrit values showed a parallel reduction.

The authors state that the withdrawal of small quantities of blood over a 20-hour period produced a more severe anaemia than the withdrawal of a comparable amount of blood in one prolonged bleeding. It is nevertheless stated that when there was a gradual loss of blood over an extended period of time, the bird was able partially to offset the loss through compensating mechanisms.

—S. BRIAN KENDALL.

JOYNER, L. P. & KENDALL, S. B. (1955). **Synergism in the chemotherapy of *Eimeria tenella*.**—*Nature, Lond.* 176, 975. 2244

Pyrimethamine, an antimalarial drug, has a synergic effect on the anticoccidial drug sulphadimidine, allowing a reduction of one eighth to one sixteenth of the dose of the latter for complete protection. A concentration of 0.0025% of pyrimethamine and 0.05% of sulphadimidine in the food successfully

controls coccidiosis due to *E. tenella*. At these concentrations the action is selective on the later developmental stages, allowing the earlier stages to develop and produce immunity and thereby obviating delayed clinical manifestations of the disease when medication ceases.—E. J. L. SOULSBY.

PORTER, C. C. & GILFILLAN, J. L. (1955). **The absorption and excretion of orally administered nicarbazin by chickens.**—*Poult. Sci.* 34, 995-1001. 2245

Nicarbazin is stated to be an equimolar complex of 4, 4'-dinitrocabanilide (D.N.C.) and 2-hydroxy-4, 6 dimethyl-pyrimidine (H.D.P.). To obtain information on the absorption and excretion of the drug it was necessary to develop analytical methods for each of the components. Thus it appeared that when young cockerels were given oral doses of nicarbazin, the D.N.C. portion of the molecule was absorbed more rapidly and the H.D.P. portion less rapidly than when the components were given singly or simultaneously. Following absorption, the H.D.P. portion of nicarbazin was excreted or metabolized more rapidly than was the D.N.C. portion. It was not possible to detect H.D.P. in the blood plasma of cockerels receiving nicarbazin at the max. recommended concentrations in the food (0.02%). Although H.D.P. could be detected in the liver of treated birds none was apparent 24 hours after medication was withdrawn. The concentrations of D.N.C. in plasma and the tissues were proportional to the concentrations of nicarbazin in the food. Only traces remained, however, 48 hours after withdrawal of the medicated food.—S. BRIAN KENDALL.

POPOV, P. I. (1955). **[Use of hemosporidin in the control of *Babesia* infection in horses.]**—*Sborn. Rabot XXXVI Plenum. vet. Sect., Akad. sel'skokhoz. Nauk imeni Lenin., Moscow* 1952. pp. 149-153. [In Russian.] 2246

Horses with *Babesia caballi* in blood smears were each given a s/c inj. of "hemosporidin" at a dosage of 0.03 mg./kg. body wt., as a 2% aqueous soln. No further cases occurred in a group of 50 horses thus treated, whereas 7-22 cases occurred each year in untreated groups. Horses showed signs of depression for a few hours after administration of the drug. It was claimed that the drug also acted effectively if instilled into the conjunctival sac.—R.M.

NECHINENNYI, D. K. (1955). [Results of a three-year trial of hemosporidin in the treatment of *Babesia* infection of sheep.]—*Sborn. Rabot XXXVI Plenum. vet. Sect., Akad. sel'skokhoz. Nauk imeni Lenin., Moscow* 1952. pp. 154-159. [In Russian.] 2247

Out of 21,000 sheep examined in the Crimea over the course of 3 years, 558 clinical cases of *Babesia* infection (body temp. 40°C. and higher) and 4,078 suspected cases (slightly increased body temp.) were treated with "hemosporidin" (an organic copper ester of benzhydrol) at a dosage of 1 mg./kg. body wt., given s/c as a 1% aqueous soln. 96.8% of the treated sheep recovered.—R.M.

ENIGK, K. & REUSSE, U. (1955). Berenil, ein neues Heilmittel für die Babesiosen der Haustiere. [Berenil against piroplasmosis in domestic animals.]—*Z. Tropenmed. u. Parasit.* 6, 141-150. [English summary.] 2248

Berenil [V.B. 26, 1218 & 1219] was effective against piroplasmosis in dogs, sheep and cattle, but not against *Theileria recondita* infection in sheep. It was stated that *Babesia* did not develop resistance to the drug and that doses higher than 10 mg./kg. body wt. may prove toxic. Lower doses were well tolerated. There was no local reaction to the drug when administered intramuscularly.—E.G.

ANTONYAN, A. G. (1955). [Treatment of *Theileria* infection in cattle with aminoacridin.]—*Sborn. nauch. Trud. Leningr. Inst. Usovershenst. vet. Vrach.* 10, 213-214. [In Russian.] 2249

The i/v administration of 3.5 mg./kg. body wt. of a 7-aminoacridine derivative as a 1% aqueous soln. was an ineffective treatment for *Theileria* infection in cattle.—R.M.

KORNIENKO, Z. P. (1955). [Anaplasma infection of cattle in Turkmenistan.]—*Sborn. Rabot XXXVI Plenum. vet. Sect., Akad. sel'skokhoz. Nauk imeni Lenin., Moscow* 1952. pp. 106-114. [In Russian.] 2250

K. reported on a 6-year investigation into anaplasmosis, during which some 500 cattle, 6,000 blood smears and 5,000 ticks were examined. He stated that the causal organism was identical with *Anaplasma marginale rossicum* Yakimov & Belavin 1927. It varied in diam. from 0.3-1.33 μ . In an artificially-infected calf which developed a severe form of the disease, the proportion of parasites situated at the periphery of the r.b.c. was 91% at the onset of symptoms and 73% at their termination. In another calf with a mild form

of the disease, these proportions were 70% and 81% respectively. *Rhipicephalus turanicus* and *Hyalomma asiaticum* were the chief vectors of anaplasmosis in Turkmenistan. There is no information regarding the incidence of the disease.—R.M.

LAINSON, R. (1955). Toxoplasmosis in England.

I. The rabbit (*Oryctolagus cuniculus*) as a host of *Toxoplasma gondii*. II. Variation factors in the pathogenesis of *Toxoplasma* infections: the sudden increase in virulence of a strain after passage in multimammate rats and canaries.—*Ann. trop. Med. Parasit.* 49, 384-396 & 397-416. 2251

I. *T. gondii* was isolated from 6 out of 113 domestic rabbits by passage of brain suspensions in mice. In-contact rabbits did not become infected in 7 months. The parasite was not found in 122 wild rabbits. There was no antigenic relationship between *Toxoplasma* and *Encephalitozoon*. Suggestions were made as to how the rabbit might be a reservoir for human infections.

II. Passage of an avirulent strain of *T. gondii* through multimammate rats (*Mastomys*=*Rattus coucha*) rendered it highly fatal for mice and g. pigs but not for rabbits. L. maintained that these rats and to a lesser extent, canaries, altered the physiology of the parasite, producing an enhancing factor.

—J. G. O'SULLIVAN.

BIERING-SØRENSEN, U. (1956). Fjerakraetoxoplasmose. Om forekomsten af endemisk optraedende toxoplasmose (toxoplasmosis gallinarum) i danske hønsebesætninger. [Endemic toxoplasmosis in fowls in Denmark.]—*Nord. VetMed.* 8, 140-164. [In Danish. English and German summaries. Abst. from English summary.] 2252

Of 26,000 fowls sent for P.M. examination, toxoplasmosis was diagnosed in 35 hens originating from 21 flocks. Necrosis of the optic chiasma was present in 11. In 6 of these flocks the diagnosis was confirmed by serological or transmission tests. In 15 further cases protozoon-like organisms were demonstrated, which showed evidence of schizogony. —M.G.G.

FREUDENBERG, F. (1956). Zur Klinik der Myositis sarcosporidica des Pferdes. [Clinical picture of sarcosporidiosis in the horse.]—*Tierärztl. Umsch.* 11, 91-93. 2253

P.M. examination of a 6-year-old horse with progressive lameness of the hind limbs and incoordination of movement revealed

eosinophilic myositis associated with sarco-
sporidia infection. This was the third case
recorded at the University Animal Clinic at
Halle during 70 years.—R.M.

EADIE, J. M., MANN, S. O. & OXFORD, A. E.
(1956). **A survey of physically active organic
infusoricidal compounds and their soluble
derivatives with special reference to their ac-
tion on the rumen microbial system.**—*J. gen.
Microbiol.* **14**, 122-133. [Authors' summary
modified.] 2254

Many sparingly water-soluble neutral
substances, including several indole deriva-
tives, will quickly kill and often disintegrate
washed rumen ciliates at 35° to 39°C., when
acting at or near the saturation point
(0.002-0.1M) in a phosphate+acetate buffer at
pH 7. They are mostly readily soluble in
light petroleum. Organisms of the genera
Isotricha, *Dasytricha* and *Ophryoscolex* in
particular exhibit characteristic modes of

disintegration when acted upon by such sub-
stances. Prominent among these are the
terpene alcohols menthol, borneol and *iso*-
borneol, and their more soluble glucosides
(both α - and β -) and their acid succinates.
Menthoxycetic acid is similarly toxic. On
the other hand, menthol and borneol β -
glucuronides are not toxic to the rumen ciliates
unless added to rumen contents containing
bacteria. Unlike menthol, borneol in nearly
saturated solution is not particularly toxic to
Streptococcus bovis and *Sarcina bakeri*, and
high concentrations (0.1-0.4%) of the
terpenoid succinates and glucosides are
required for partial inhibition of the growth
of true rumen saccharolytic bacteria under
otherwise favourable conditions. The popu-
lation of lipolytic (esterase producing) bacteria
in rumen contents from a sheep fed on hay
and dried grass was about 500,000 per g.
Bacillus licheniformis was the chief anaerobic
lipolytic species isolated.

See also abst. 2377 (avian diseases transmissible to man).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

VITTOZ, R. (1956). Documents pour l'édifica-
tion d'une prophylaxie internationale de la
fièvre aphteuse en Asie méridionale et en
Extrême-orient. [Proposals for international
control of foot and mouth disease in the Far
East.]—*Bull. Off. int. Epiz.* **45**, 92-124. 2255

The most urgent needs are the setting up
of control points at ports, frontier stations,
and aerodromes; determination of the role of
climatic factors; identification of the virus
strains and knowledge of their distribution;
and preparation of a suitable vaccine.

—M.G.G.

ANON. (1955). Report by the technical advisor
of the Swiss delegation to the 21st session of
the Council of FAO on the subject of the im-
portation of animals preventively vaccinated
against foot and mouth disease.—Rome: Food
and Agriculture Organization of the
United Nations. FAO/55/9/5915. pp.
4. 2256

Although a resolution was passed in 1946
and reaffirmed in 1955 by the Office Inter-
national des Epizooties that livestock im-
munized against F. & M. disease with an
approved vaccine, coming from areas free
(for 6 months) from the disease, may be per-
mitted to enter international trade, import
restrictions on such livestock have not yet been
lifted everywhere. It was stated that these

prohibitions were unjustified as fears that
vaccinated animals might be carriers of the
virus were unfounded. If the effective con-
trol methods against F. & M. disease, used in
some countries, were universally applied, it
should be possible to eradicate the disease
within a comparatively short time.

—A. ACKROYD.

I. WALDMANN, O., NAGEL, H. C. & ZIMMER-
MANN, T. (1955). Die künstliche MKS-Infek-
tion beim neugeborenen, nüchternen Kalb.
[Artificial infection of the unfed new-born
calf with foot and mouth disease virus.] —
Zbl. Bakt. I. (Orig.) **163**, 230-238. [English,
French and Russian summaries.] 2257

II. WALDMANN, O. & ZIMMERMANN, T. (1955).
Herstellung der MKS-Vaccine nach Wald-
mann und Köbe unter Verwendung des Kal-
bes als Antigenquelle. [Preparation of foot
and mouth disease vaccine, using calves as
the source of antigen.] — *Ibid.* 239-244.
[English, French and Russian sum-
maries.] 2258

I. New-born calves which had not been
given colostrum were infected by the i/p inj.
of F. & M. disease virus, and were sub-
sequently fed on milk until they died 36-48
hours later. The virus multiplied in the
heart, lungs and bones. It was passaged from
calf to calf without losing virulence.

II. The authors prepared F. & M. disease adsorbate vaccines from organ suspensions from artificially infected new-born calves [see previous abst.]. The vaccines possessed good immunizing properties and were cheaper to produce than those prepared from tongue tissue.—R.M.

MACKOWIAK, C., GIRARD, H., CAMAND, R. & HIRTZ, J. (1955). Recherches sur la multiplication du virus aphteux en culture de tissu. I. Étude biologique des cultures de longue durée. [**Multiplication of foot and mouth disease virus in tissue culture. I. Biological study of cultures of long duration.**] — *Rev. Immunol.* **19**, 426-435. 2259

HIRTZ, J. & FAYET, M. T. (1955). Recherches sur la multiplication du virus aphteux en culture de tissu. II. Étude biochimique des cultures de longue durée. [**Multiplication of foot and mouth disease virus in tissue culture. II. Biochemical study of cultures of long duration.**]—*Ibid.* 436-446. 2260

I. The 3 types of virus (A, O, and C) maintained in tissue culture on ox tongue epithelium underwent 3 different phases. First, the virus became adsorbed on the epithelial cells and lost its viral properties. This was followed by multiplication. After the 25th hour or so one or more multiplication cycles took place or, inversely, there was a more or less rapid diminution of viral characteristics. The infective and complement-fixing properties varied in a practically parallel fashion.

II. In culture, the production of the amino-acids of the medium and of the nucleic acids of the tissue does not proceed parallel with the multiplication of the virus. The latter accelerates lysis of the tissue in culture and apparently attacks only a small proportion of the cells, multiplying in the cytoplasm. This would confirm its ribonucleoproteic structure. The low viability of the tongue epithelium in culture and the lack of knowledge regarding the role of the medium are stressed.—T.E.G.R.

ALTERAUGE, W. (1956). Allergie als Begleitsymptom bei Tierimpfungen. [**Allergy and foot and mouth disease vaccination.**]—*Berl. Münch. tierärztl. Wschr.* **69**, 67-71. [English summary.] 2261

Between 1948 and 1951, 44,489 cattle were vaccinated at Dortmund against F. & M. disease. The number of allergic reactions was negligible. From 1952 to 1954, of 11,008

cattle vaccinated, between 3% and 10% developed generalized allergic symptoms. The author discussed the aetiology and suggested that non-specific antigens in the serum or vaccine acted as allergens.—M.G.G.

PLISHKO, N. T. (1955). [**Treatment and prophylaxis of mastitis in cows after foot and mouth disease.**]—*Veterinariya, Moscow.* **32**, No. 11, pp. 25-27. [In Russian.] 2262

Mastitis develops frequently after F. & M. disease. P. applies the following treatment:—The udder is washed and dried; the teats are treated with ethoxy diaminoacridine lactate or boric acid; 100-150 ml. warm sodium bicarbonate is instilled through a milk catheter. This is followed by 50-75 ml. containing 100-150,000 units penicillin in 0.5% procaine hydrochloride. This treatment is repeated on 3 consecutive days.—A. MAYR-HARTING.

MOOSBRUGGER, G. A., SPUHLER, V. & MEYER, K. (1956). Über die Katalaseaktivität der Leber beim mit Maul- und Klauenseuche infizierten Meerschweinchen. II. Mitteilung über Katalase. [**Catalase activity of the liver of g. pigs infected with foot and mouth disease. II.**]—*Schweiz. Z. allg. Path.* **19**, 98-102. [English and French summaries. English summary modified.] 2263

No diminution of catalase activity could be demonstrated in the liver of g. pigs during the course of a severe infection with the virus of F. & M. disease.

VETTERLEIN, W. (1955). Der Nachweis von Antikörpern gegen Maul- und Klauenseuche im Serum gesunder, besonders infektionsexponierter Menschen. [**Identification of foot and mouth disease antibodies in the serum of healthy human beings exposed to infection.**]—*Zbl. Bakt. I (Orig.)* **162**, 4-12. 2264

Sera from 34 employees at the Research Institute for Diseases of Animals on the Island of Riems, Germany, were examined for the presence of F. & M. disease antibodies by the serum neutralization test with unweaned mice. Antibodies were detected in the serum of 5 individuals.—R.M.

BACHRACH, H. L., CALLIS, J. J. & HESS, W. R. (1956). Vesicular stomatitis virus in tissue cultures and cell suspensions. — *Proc. Soc. exp. Biol., N. Y.* **91**, 177-180. [Authors' summary modified.] 2265

Vesicular stomatitis virus, New Jersey type, was propagated in suspensions of surviving trypsin-dispersed kidney cells of g. pigs

and in cultivated epithelial cells and fibrocytes. Both methods gave nearly equal virus yields, the highest being approx. $10^{6.9}$ tissue culture LD_{50}/ml . The highest virus concentrations in cultures and suspensions were most frequently recorded at 24 and 72 hours following infection, respectively. Cell suspensions were increased in volume from 2 ml. to 200 ml. without altering the virus yields. After peak virus concentrations had been reached, the rate of destruction of virus infectivity upon further incubation was significantly higher for cultures than for suspensions. Vesicular stomatitis virus also grew in suspensions of dispersed bovine kidney cells.

MARTINS MENDES, A., DA GRAÇA, H. M., LEITE VELHO, E. F. & DASKALOS, A. M. (1954). Nota prévia. Existe em Angola a doença de Aujeszky. [Existence of Aujeszky's disease in Angola.]—*Pecuária*. (1953/54). pp. 105-119. [English, French and German summaries.] 2266

The authors recorded the existence of a focus of Aujeszky's disease in Angola. The diagnosis in a pig was based on symptomatology and on histological and rabbit inoculation tests.—I. W. JENNINGS.

YAKOVLEV, T. G. (1955). [Vaccination of piglets aged 1-2 days against Aujeszky's disease.]—*Veterinariya, Moscow*. 32, No. 8, p. 83. [In Russian.] 2267

Y. recommended vaccination of sows, giving one injection 2-3 weeks before parturition, and the second a week later. New-born piglets are injected within the first two days, and again a week later. [No details of the vaccine are given.]—A. MAYR-HARTING.

HUTTER, K. (1955). Bekämpfung der Tollwut-epizootie des Jahres 1953 im Bezirk Erfurt. [Control of rabies during an epidemic in the Erfurt district, Germany, in 1953.]—*Mh. VetMed*. 10, 607-610. 2268

An epidemic of rabies was controlled by the following measures: strict control of cats and dogs, disposal of wild animals found dead, destruction of foxes and stray dogs and cats and elimination of all cats in areas where infection in cats was demonstrated.—M.G.G.

DEPOUX, R. & MERVEILLE, P. (1956). Sur la valeur de la réaction de déviation du complément dans le diagnostic de la rage. [Value of the complement-fixation test in the diag-

nosis of rabies.]—*Ann. Inst. Pasteur*. 90, 182-186. [Abst. from English summary.] 2269

Cerebra of mice and g. pigs inoculated intracerebrally with rabies virus were used for the preparation of an antigen which fixed complement in the presence of homologous hyperimmune serum. In cases of natural infection, only two thirds of the positive reactions were correct. It seems that only the negative reactions can be relied on.

ANDO, K., ISHII, K., OKA, Y. & IRISAWA, J. (1953). Studies on the immunological diagnosis of the animals suspected of rabies (second report).—*Jap. J. med. Sci. Biol.* 6, 659-666. [In English.] 2270

The authors discussed diagnosis of rabies by the complement-fixation reaction, using antigen from brain and salivary gland tissue of suspected animals and immune serum prepared from animals infected with both fixed and street virus. The c.f. reaction is stated to be superior to the conventional diagnostic methods of virus isolation and histological examination because no special apparatus is needed, results are obtained in a comparatively short time and even decomposed material from suspected animals may be used.—E.G.

MAALØE, O. (1955). Results of collaborative assays of the proposed international standard for anti-rabies serum.—WHO Expert Committee on Biological Standardization. (WHO/BS/329.) pp. 7. 2271

Assays of the proposed international standard hyperimmune antirabies horse serum, No. 4765, in Paris, New York, and Madrid, indicate that it is about twice as potent as the U.S. national standard antirabies sheep serum, No. 104. It shows no diminution in neutralizing potency after exposure to high temperatures for long periods. The requirement of the Expert Committee on Rabies that a prophylactic antirabies serum should be at least 2.5 times as potent as the standard may need modification.—A. ACKROYD.

HACKENTHAL, H. (1955). Studien über den Habeltest. [Study of the Habel test for rabies vaccines.]—*Zbl. Bakt. I. (Orig)*. 162, 17-23. 2272

The use of 2% serum for diluting fixed virus used for vaccination, gave rise to a non-specific increase in the LD_{50} of the vaccine for mice.—R.M.

FONG, J. (1956). Studies on antigenicity of inactivated influenza virus.—*J. Immunol.* **76**, 33-35. [Author's summary slightly modified.] **2273**

The level of neutralizing antibodies in the serum of mice was highest after immunization with live virus. No significant difference in antigenicity was noted for mustard-inactivated and formalin-inactivated vaccines. Virus inactivated with 5×10^{-4} M mustard possessed a much greater interfering capacity than virus treated with 5×10^{-3} M mustard, but this was not reflected by a higher level of antigenicity.

BLACKMORE, J. S. & WINN, J. F. (1956). A winter isolation of Western equine encephalitis virus from hibernating *Culex tarsalis* Coquillett.—*Proc. Soc. exp. Biol., N.Y.* **91**, 146-148. [Abst. from authors' summary.] **2274**

Of 1,361 hibernating female *C. tarsalis* mosquitoes, comprising 31 pools, collected in mines in the Colorado foothills from mid-December 1953, to the end of February 1954, one pool revealed WEE virus on inoculation into freshly hatched chicks.

BARNETT, H. C. (1956). The transmission of Western equine encephalomyelitis virus by the mosquito *Culex tarsalis* Coq.—*Amer. J. trop. Med. Hyg.* **5**, 86-98. **2275**

B. confirmed the work of Hammon & Reeves [*V.B.* **14**, 1483] that the virus of Western equine encephalomyelitis can be transmitted from fowl to fowl and from canary to canary under lab. conditions.—R.M.

SHIMIZU, T., KAWAKAMI, Y., FUKUHARA, S. & MATSUMOTO, M. (1955). Experimental still-birth in pregnant swine infected with Japanese encephalitis virus.—*Exp. Rep. nat. Inst. Anim. Hlth, Tokyo*. No. 30. pp. 53-66. [In English. Japanese summary: pp. 51-52.] **2276**

Intravenous inoculation of the virus of Japanese encephalitis into healthy pregnant sows was followed by the death of some or all of the fetuses *in utero*. A viraemia following inoculation occurred after a latent period and fetuses were infected by the virus passing through the placenta. Neutralizing antibody against the virus was rapidly produced in the dams.—M. B. HAWKSLEY.

HURST, E. WESTON, SNOW, G. A. & ROBERTS, D. C. (1955). The antiviral activity of mepacrine in relation to morphological changes

produced by the drug.—*Brit. J. exp. Path.* **36**, 215-225. **2277**

A description of the appearance, nature and distribution of basophilic particles deposited in the tissues and organs (reticulo-endothelial system) of mice, but not in most of their nervous system, after single or repeated large doses of mepacrine. These granules are thought to contain an acidic metabolite of mepacrine and are responsible for the persistent yellow coloration of the tissues after treatment. Other laboratory animals differ greatly in the ability of their tissues to acquire this coloration after mepacrine and instead yellowish granules may form in their tissues which fluoresce in u.v. light.

Mepacrine is strikingly active against Eastern equine encephalomyelitis in mice, but not in g. pigs, rabbits, chickens, monkeys or newly weaned rats, while having some activity in adolescent rats. In the mouse, the basophilic particles themselves have no great therapeutic activity, and the ability or otherwise to deposit them bears no obvious relation to the therapeutic effect in this species.

—G. P. MARSHALL.

MÜLLER, F. L. & FRITZSCH, R. (1955). Die Augenveränderungen bei der Bornaschen Krankheit. [Ocular symptoms in Borna disease.]—*Wien. tierärztl. Mschr.* **42**, 866-871. [English, French and Italian summaries.] **2278**

In 31 out of 36 horses with Borna disease, subsequently confirmed by histological examination of the brain, the reaction of the pupil to light was delayed or absent, and the retinal blood vessels were congested.—R.M.

STECK, W. (1955). Beobachtungen über eine von Monozytose begleitete Krankheit aus der Gruppe der Pferdegrippe. [A disease of the equine influenza group which is accompanied by monocytosis.]—*Wien. tierärztl. Mschr.* **42**, 754-759 [English, French and Italian summaries.] **2279**

A small outbreak of disease in army horses in Switzerland was characterized by fever, coughing and catarrhal inflammation of the upper respiratory tract, lasting for 5-11 days. Conjunctivitis was absent. Monocytosis (7-15% of the w.b.c. were monocytes) was present. The aetiology of the disease was not investigated.—R.M.

RANDALL, C. C. & DOLL, E. R. (1956). Further observations of the *in vitro* susceptibility of

adult horse tissue to equine abortion virus.—
Cornell Vet. 46, 64-67. [Abst. from authors' discussion and summary.] 2280

Specific viral inclusion bodies were demonstrated *in vitro* in several tissues from adult horses. In general, the infected tissues corresponded to those in which gross lesions appear *in vivo*. Intranuclear inclusion bodies were demonstrated in tissue cultures of spleen, lung, lymph nodes, cornea, conjunctiva, and upper and lower nasal mucosa, but were not seen in the endometrium, cervix, vagina, or trachea.

DOLL, E. R., BRYANS, J. T., MCCOLLUM, W. H. & CROWE, E. W. (1956). Propagation of equine abortion virus in Syrian hamsters.—*Cornell Vet.* 46, 68-82. 2281

By gradually increasing the dosage of intraperitoneally injected liver suspensions containing equine abortion virus, 11 strains were adapted to grow in hamsters. Initially passage was in hamsters aged 3 days. Later alternate passages were made in unweaned and adult hamsters. The fully adapted virus retained its infectivity for the equine foetus and produced fatal infections in hamsters when administered by every route except by inhalation. Room contact infection was not observed. The virus was present in all tissues and in the blood and urine of fatally infected animals. Procedures for preparing stock virus and conducting titrations are described.—A. ACKROYD.

TAKEMATSU, M. & MORIMOTO, T. (1954). [Studies on tissue culture with rinderpest virus.]—*Jap. J. vet. Sci.* 16, Suppl. p. 55. [In Japanese. English title p. 185.] 2282

Lapinized virus was cultivated in tissue culture of lymph node, spleen and bone-marrow of rabbits by the roller-tube method. Serial passages were then successfully made in lymph node tissue culture.—KOGI SAITO.

FURUTANI, T., NAKAMURA, H., ISHII, S. & KURATA, K. (1954). [Studies on the rinderpest virus neutralization method in embryonating eggs. I. Route of inoculation.]—*Jap. J. vet. Sci.* 16, Suppl. pp. 56-57. [In Japanese. English title p. 185.] 2283

In rinderpest virus neutralization tests in chick embryos, using lapinized virus, the intravenous route gave more reliable results than the yolk sac route.—KOGI SAITO.

ISHII, S. & KURATA, K. (1954). [Method of demonstrating rinderpest CF antigen in the

yolk sac of embryonating eggs infected with the avianized strain of rinderpest virus.]—*Jap. J. vet. Sci.* 16, Suppl. p. 56. [In Japanese. English title p. 185.] 2284

In order to demonstrate complement-fixing antigen in the yolk sac of chick embryos infected with avianized virus, 40 normal and 50 infected specimens were examined with satisfactory results by the following method:—Paired samples of hyperimmune and normal bovine serum were used. Etherized antigen was prepared from infected yolk sacs. The "complement dilution method" described by Nakamura was employed.—KOGI SAITO.

NAKAMURA, J. & KISHI, S. (1954). [Changes in some characteristics of lapinized-avianized rinderpest virus (LA) after passage back in rabbits.]—*Jap. J. vet. Sci.* 16, Suppl. p. 54. [In Japanese. English title p. 185.] 2285

During early passages there was no change in the characteristics of the virus: ability to produce c.f. antigen was marked in chick embryos and poor in rabbits. After the 15th passage the virus had the characteristics of lapinized virus, producing c.f. antigen only in rabbits.—KOGI SAITO.

NAKAMURA, J., MATSUZAWA, H., KISHI, S. & KIUCH, J. (1954). [Experimental infection of pigs with lapinized and lapinized-avianized strains of rinderpest virus.]—*Jap. J. vet. Sci.* 16, Suppl. p. 55. [In Japanese. English title p. 185.] 2286

Lapinized (L) and lapinized-avianized (LA) strains were each inoculated into 3 pigs. No visible reaction was manifested, but in all the animals there were slight but characteristic changes in the blood picture. Viraemia was seen in all the L- and in one of the LA-inoculated pigs. Virus neutralizing and complement-fixing antibodies were demonstrable in all cases.—KOGI SAITO.

VENN, J. A. J. & WOODFORD, M. H. (1956). An outbreak of tick-borne fever in bovines.—*Vet. Rec.* 68, 132-133. 2287

Eleven cattle in a herd of 13 became affected. Symptoms were fever, listlessness and reduced milk yield. Two cases were successfully treated with 500 mg. or 1 g. of oxytetracycline injected i/v.—M.G.G.

DENISENKO, I. F. (1955). [Bovine influenza in wintertime.]—*Veterinariya, Moscow.* 32, No. 11, pp. 30-31. [In Russian.] 2288

A note on a benign virus disease in cattle, also called three-day-fever. Its main features

are discharge from eyes and nose, inflamed and tender hooves, and a diminished milk output. The infection is dust-borne in summer, but transmitted by contact and water in winter. In December 1954, a severe outbreak was observed on a communal farm, with a high mortality rate; the deaths were probably due to delay in the organisation of food and water supplies during a spell of severe weather [see also *V.B.* **20**, 2248].

—A. MAYR-HARTING.

SCHHEEL, E. H. (1956). **Use of pancreatic dornase in infectious bovine rhinotracheitis.**—*Vet. Med.* **51**, 136-137. **2289**

Affected cattle have been successfully treated by the intratracheal injection of 100,000 units of pancreatic dornase in 10 ml. of a penicillin - dihydrostreptomycin combination and 20 ml. of 50% glucose soln.—M.G.G.

VAN DEN ENDE, M., LINDER, A. & KASCHULA, V. R. (1954). **Experiments with the Cyprus strain of blue-tongue virus: multiplication in the central nervous system of mice and complement fixation.**—*J. Hyg., Camb.* **52**, 155-164. **2290**

Evidence of multiplication of the virus in the brains of baby mice (aged 1-10 days) and of adult mice (3-4 weeks) appeared after 8-12 hours. In the latter there were no symptoms. A complement-fixing antigen was prepared from the brains of baby mice and from chick embryos. An immune serum was produced from adult mice immunized by repeated i/p inj. of infected baby mouse brain. There was no evidence of interference with virus multiplication either by chick embryo virus incubated at 38°C. or by the virus from the brain of adult mice.—T.E.G.R.

PURDY, M. J. (1955). **Orf.**—*N. Z. med. J.* **54**, 572-575. **2291**

P. described a lesion on the back of the hand of a stock auctioneer, who apparently became infected by handling sheep with pustular dermatitis. Diagnosis was confirmed by inoculation of two susceptible and one immunized lamb with ground scab tissue suspended in saline from the patient's lesion.

—E.G.

SAWA, I. (1955). **Inhibition de la multiplication du virus de la fièvre de la Vallée du Rift par le virus homologue irradié par des rayons ultraviolets. [Inhibition of multiplication of the virus of Rift Valley fever by the same**

virus irradiated by ultra-violet light.]—*C.R. Soc. Biol., Paris.* **149**, 2050-2052. **2292**

Mice were inoculated s/c with the virus of Rift Valley fever which had been exposed to ultra-violet light for 30 sec. They did not die and resisted an inj. of fully virulent virus either immediately after the first inj. or up to 4 days after. Control mice inoculated with virulent virus alone, died after 28-40 hours.

—R.M.

BUGYAKI, L. (1955). **La "maladie de Kisenyi" du mouton, due à un virus filtrable et transmise par des tiques. ["Kisenyi disease", a tick-borne virus disease of sheep.]**—*Bull. agric. Congo belge.* **46**, 1455-1462. [In French. Flemish summary.] **2293**

A highly fatal, non-contagious disease of sheep is described, which occurs in a region heavily infested with ticks. Symptoms are a febrile reaction, listlessness, inappetence and diarrhoea. P.M. lesions are necrosis of the mucosae of the abomasum, small intestine and caecum, and hypertrophy of the mesenteric lymph nodes. Histological examination reveals degeneration of the heart and kidneys and interlobular oedema and hepatization of the lungs. Transmission tests of the disease to healthy sheep were described. It could not be transmitted to goats, cattle or laboratory animals.—M.G.G.

ISHII, S., OMORI, T., HARADA, K., INABA, Y., MORIMOTO, T. & MATSUMOTO, M. (1955). **Study on an infectious pneumonia of goats caused by a virus. IV. Tetracycline treatment of experimental pneumonia in goats caused by the goat pneumonia virus.**—*Exp. Rep. nat. Inst. Anim. Hlth., Tokyo.* No. 30, pp. 113-123. [In English. Japanese summary: pp. 111-112.] **2294**

Tetracycline was effective in arresting the course of infection produced in goats by the inoculation of goat pneumonia virus. Less severe clinical symptoms and fewer lesions were present in the treated animals than in untreated controls.—M. B. HAWKSLEY.

RIBEIRO BAPTISTA, A. I. & MARTINS MENDES, A. (1954). **Estudo imunológico sobre a peste suína em Angola. [Immunological study of swine fever in Angola.]**—*Pecuária.* (1953/54). pp. 5-31. **2295**

Swine fever as it occurs in Angola is a much more virulent disease than that occurring in Europe. It is occasionally complicated by *Salmonella cholerae-suis* infection.

Serum-vaccination will probably be the best method of control in Angola.

—I. W. JENNINGS.

WYNOHRADNYK, V., PAPADOPOL, M., SOTIRIU, E. & TAGA, L. (1955). *Studiu comparativ asupra vaccinelor antipestoase porcine. [Comparative study of vaccines against swine fever.]* — *Anu. Inst. Pat. Igien. anim., Bucuresti*, 5, 92-112. [In Roumanian. French and Russian summaries.] 2296

The immunizing capacity of a swine fever vaccine prepared from aqueous extract of infected pig spleen and inactivated by a crystal violet-glycerol-phenol soln. and heat, was stated to be equal to or only slightly lower than that of formolized and adsorbed vaccines prepared from that extract. The vaccine retained its efficiency for up to 7 months when stored in the dark at low temp.—E.G.

AIRAPETYAN, V. G. (1955). [Symposium on diseases of pigs. Erythrocyte-crystal violet-glycerol vaccine against swine fever.] — *Veterinariya, Moscow*, 32, No. 11, pp. 36-37. [In Russian.] 2297

This vaccine is prepared from the lysed erythrocytes of a virus-infected animal. The virus is inactivated with crystal violet, and glycerol is added. [No further details are provided.] The vaccine is injected s/c, either one dose of 15 ml. or two of 5-10 ml. There is a temperature reaction lasting 1-2 days. Pigs under 6 weeks of age cannot be immunized. Antiserum, followed 10 days later by active immunization, provides a durable immunity. The vaccine keeps at least two and a half years. It is recommended by the U.S.S.R. Ministry of Agriculture for large-scale application.—A. MAYR-HARTING.

OHASHI, M., YAMAGUCHI, M. & MURAMATSU, C. (1954). [Studies on swine fever crystal violet vaccine. I.] — *Jap. J. vet. Sci.* 16, Suppl. pp. 137-138. [In Japanese. English title p. 204.] 2298

Crystal violet vaccine treated with formol or with phenol was kept in the incubator at 37.5°C. for 2 weeks. In comparative tests of these vaccines with the conventional crystal violet vaccine, the formolized vaccine was the most effective.—KOGI SAITO.

OKANIWA, A., ISHITANI, R., SASAHARA, J. & SUGIMURA, K. (1954). [Studies on lapinized swine fever virus. Pathological observations on pigs inoculated with lapinized virus and ROVAC. II. Findings of vital staining and

histopathology of other organs.] — *Jap. J. vet. Sci.* 16, Suppl. pp. 46-47. [In Japanese. English title p. 183.] 2299

Lesions in pigs inoculated with lapinized virus were compared with those in pigs inoculated with virulent virus. Lesions were either slight or absent in the former group. Vital staining revealed less activity of the reticuloendothelial system in the former than in the latter pigs.—KOGI SAITO.

SASAHARA, J., HAYASHI, S., MUNEKATA, K., HIRASAWA, K., KATO, K. & OKANIWA, A. (1954). [Studies of a swine virus disease with nervous symptoms which occurred in the winter of this year. I. Isolation of the virus.] — *Jap. J. vet. Sci.* 16, Suppl. p. 139. [In Japanese. English title p. 204.] 2300

ISHITANI, B., OKANIWA, A., SHIBATA, D. & SASAHARA, J. (1954). [Studies on a swine virus disease with nervous symptoms which occurred in the winter of this year. II. Histopathological observations.] — *Ibid.* p. 139. [In Japanese. English title p. 204.] 2301

I. In the winter of 1954, a virus disease affecting pigs, 2-3 months old, was found in Tokyo and Aomori Prefecture. The main symptoms were anorexia, tremors, tetanic convulsions, involuntary movement, dulness, turning movements and dyspnoea. Mortality was over 75%. The virus was isolated by intra-amniotic inoculation of 13-day-old chick embryos with brain material from affected animals. It was tentatively designated HVJ (haemagglutinating virus of Japan); it was considered to be a new member of the Mumps-Newcastle Disease-Influenza group of viruses, but it had no common antigenic component with the viruses of influenza: A(WS), A'(FM₁), B(Lee), C(1233), nor with swine influenza or Newcastle disease.

II. In a case in Tokyo, restricted perivascular cuffing in the frontal lobe and softening lesions in the midbrain and pons were observed. A case in Aomori had severe encephalitic changes in each lobe of the cerebrum. These two cases from which the virus was isolated, seemed to have essentially the same histopathological changes, which differed from those of swine fever and swine influenza.

—KOGI SAITO.

SASAHARA, J. (1955). Studies on the HVJ (hemagglutinating virus of Japan) newly isolated from the swine. — *Exp. Rep. nat. Inst. Anim. Hlth, Tokyo*, No. 30, pp. 13-38. [In Japanese and English.] 2302

The results of laboratory examination of the physical and biological characteristics of the virus are described.—M. B. HAWKSLEY.

PLACIDI, L. & HAAG, J. (1956). La "pneumonie à virus" du porc. Étude clinique et expérimentale d'une épizootie au Maroc. I. Étude clinique. [**Porcine virus pneumonia in Morocco. I. Clinical study.**]—*Rec. Méd. vét.* **132**, 5-20. **2303**

The virus pneumonia of pigs [see also *V.B.* **22**, 3709; **23**, 919; **25**, 105] was differentiated from swine fever by the symptoms, which were purely pulmonary, and the lesions, strictly localized to the lungs. Vaccination with crystal violet swine fever vaccine and with lapinized virus was ineffective against challenge with the pneumonia virus, as was swine fever serum. Four piglets immunized with a formolized aluminium hydroxide adsorbed Newcastle disease vaccine succumbed to challenge with swine fever virus, but of 4 others challenged with the pneumonia virus only one developed symptoms.—F.E.W.

ANDERSSON, B. (1956). Ett fall av nervös valpsjuka behandlat med prefrontal lobektomi. [**Nervous distemper in a dog treated by prefrontal lobectomy.**]—*Nord. VetMed.* **8**, 179-182. [In Swedish. English and German summaries. Abst. from English summary.] **2304**

Prefrontal lobectomy was performed on a 1½-year-old dog with nervous distemper, manifested by chewing movements, marked restlessness and whining. The symptoms disappeared. The only observed effects of the operation were diminished aggressiveness and irritability.

KILHAM, L., HABERMANN, R. T. & HERMAN, C. M. (1956). **Jaundice and bilirubinemia as manifestations of canine distemper in raccoons and ferrets.**—*Amer. J. vet. Res.* **17**, 144-148. [Authors' summary modified.] **2305**

Two strains of distemper virus were isolated from wild raccoons and one from ferrets.

All three induced bilirubinaemia in raccoons and ferrets. Many raccoons with bilirubinaemia also had jaundice. The strains were identified by clinical and pathological findings and by cross-immunity tests.

WHITTEM, J. H. (1954). **A virus associated with canine encephalomyelitis.**—*Nature, Lond.* **174**, 359. **2306**

Inoculation of tissue suspensions from a

dog which had died from encephalomyelitis, and in which acute demyelinating encephalitis had been observed P.M., set up a condition characterized by a continuous high temp. and nervous symptoms. Demyelinating encephalomyelitis was also present and, in one case, interstitial pneumonia. No complement-fixing antibodies for dog distemper virus or for canine hepatitis virus were detected in the sera of experimentally infected puppies.

—T.E.G.R.

JACOTOT, H., VALLÉE, A. & VIRAT, B. (1955). Étude sur la transmission expérimentale de la myxomatose au lièvre. [**Experimental study of infectivity of myxomatosis for hares.**]—*Ann. Inst. Pasteur.* **88**, 1-10. **2307**

Thirteen hares were inoculated by various routes with myxoma virus. They showed no symptoms, except for a small nodule, described in detail, which developed in one hare (292) at a point of inoculation after 5 days. On the 15th day it was removed, and after storage in glycerol solution for a week, was inoculated s/c, in suspension, into a rabbit; the rabbit died 11 days later from myxomatosis. In a hare that died from *Eimeria* infection, P.M. examination revealed tracheitis; the scarified skin of a rabbit was rubbed with skin from this hare; the rabbit developed myxomatosis within 13 days; injections of tissue suspensions into other rabbits were without effect. Testicles were removed from 6 hares within 9-26 days after inoculation; injection of suspensions of these testicles into rabbits revealed virus in 3 hares; these 3 hares had received i/m 75 mg. of cortisone. In serological tests, specific antibody was demonstrated in hare 292, and in 3 hares which were re-inoculated in a second experiment 4 weeks later.—M.G.G.

CLARINGBOLD, P. J. & SOBEY, W. R. (1955). **The biological assay of myxoma virus.**—*Brit. J. exp. Path.* **36**, 573-582. [Authors' summary modified.] **2308**

Myxoma virus may be biologically assayed by using the diameter of the lesions produced by intradermal injection of 0.1 ml. of the virus. Lesion diameter is a more economical test criterion than either killing time or quantal occurrence of lesions. The characteristics of the dose response line are discussed with reference to the economical design of an assay. In a practical test of the assay it was shown that myxoma virus

multiplies logarithmically for at least 2 days after intracerebral inoculation into mice.

CHAPRONIERE, D. M. & PEREIRA, H. G. (1955).

Propagation of fowl plague and of Newcastle disease viruses in cultures of embryonic human lung.—*Brit. J. exp. Path.* **36**, 607-610.

[Authors' summary modified.] **2309**

Fowl plague and Newcastle disease viruses were propagated in cultures of embryonic human lung. N.D. virus did not kill the tissue culture throughout the series of 8 such passages. Fowl plague virus became cytopathogenic on the third passage and this property was enhanced in successive cultures. The human cytopathogenic variant of fowl plague virus did not revert to the parent form after 3 limit-dilution passages in embryonated eggs.

TEKLIŃSKA, M., CAKAŁOWA, A. & KARCZEWSKI, W. (1956). Nosicielstwo i siewstwo wirusa rzekomego pomoru drobiu u gęsi. [**Geese as carriers of Newcastle disease.**]—*Méd. vét., Varsovie*, **12**, 21-24. [In Polish.] **2310**

The authors repeated Asplin's experiments [*V.B.* **19**, 79] and found that experimentally infected geese started to excrete the virus in 3-6 days and their droppings were still infective to hens 15 days after infection. Although the excretion of virus by geese is only of short duration the authors consider that this factor should be considered in prophylactic measures against Newcastle disease.—M. GITTER.

BUZA, L. (1956). Kísérletek naposcsibék baromfipestis elleni aktív immunizálására. [**Attempts to immunize day-old chicks against Newcastle disease.**]—*Mag. állator. Lapja*, **11**, 43-47. [In Hungarian, English and Russian summaries. Abst. from English summary.] **2311**

Intranasal instillation of suspensions of attenuated strains of N.D. virus was found effective for the immunization of day-old chicks.—T.E.G.R.

VERGE, J. & PLACIDI, L. (1956). Évolution du virus de Newcastle chez le cobaye expérimentalement infecté. [**Evolution of Newcastle disease virus in experimentally infected g. pigs.**]—*C. R. Acad. Sci., Paris*, **242**, 573-574. **2312**

A brief account of a strain of Newcastle

disease virus which was pathogenic for g. pigs. The authors discussed the possibility of using it for immunizing fowls.—R.M.

WINTERFIELD, R. W. & SEADALE, E. H. (1956).

Newcastle disease immunization studies. I.

Viability of Newcastle disease virus administered as a vaccine in the drinking water.—

Amer. J. vet. Res. **17**, 5-11. [Authors' summary modified.] **2313**

Newcastle disease virus (B1 strain), under simulated field conditions of water administration, maintained its viability in some trials for as long as 32 hours. Viability was adversely affected by high temperatures, chlorination, litter, feed and faecal contamination, fluorinated water, and non-specific factors (undetermined) in certain waters. Most adverse effects were not as pronounced during the first 4-6 hours: a larger dosage intake of Newcastle disease virus (NDV) during this early period, therefore, would obviate marked decreases in titres.

Viability was not significantly affected by hard water, saline water, rust or iron contamination or wide variations in pH. Organic or animal-protein stabilizing materials, as well as a commercial stabilizer, were of definite value in enhancing viability under adverse conditions. Most of these conditions were amenable to the use of stabilizers provided the initial titres were satisfactory.

NADEL, M. K. & EISENSTARK, A (1955). The use of "incomplete" Newcastle disease virus as an experimental vaccine.—*Poult. Sci.* **34**, 1298-1301. [Abst. from authors' summary.] **2314**

Day-old chicks were vaccinated and challenged 3 weeks later. Results were compared with those of a commercial vaccine and of an unvaccinated control group on the basis of chi-square analyses of survival data and on *t*-test analyses of antibody titre data. "Incomplete" Newcastle virus vaccine was found to be safe when inoculated intraocularly. It was as efficient in eliciting antibody response as the commercial live vaccine.

MACK, W. N. & CHOTISEN, A. (1956). Serological response in chickens to beta-propiolactone treated Newcastle disease virus.—*Proc. Soc. exp. Biol., N.Y.* **91**, 288-290. [Authors' summary modified.] **2315**

A vaccine made by treating N.D.V. with 0.025% β -propiolactone was safe for fowls. Sera from vaccinated fowls contained protec-

tive antibodies 16 days after vaccination. There was a marked rise in haemagglutination inhibition and neutralizing antibodies.

HANSON, R. P. (1956). **An intracerebral inoculation test for determining the safety of Newcastle disease vaccines.**—*Amer. J. vet. Res.* 17, 16-17. [Author's summary modified.] 2316

The slowly killing strains of Newcastle disease virus appear to be incapable of multiplication in the c.n.s. of chicks. They are used as live vaccines for day-old chicks and their contamination with more pathogenic strains, sometimes used for vaccination of older chicks, can be detected by a test in which day-old chicks are inoculated intracerebrally. The application of the test and its interpretation are discussed.

PAPPARELLA, V. (1955). Ricerche sull'influenza della somministrazione con l'alimento della polvere di tabacco nella immunizzazione antipseudopestosa dei polli. [The effect of powdered tobacco in the diet of fowls on immunization against Newcastle disease.]—*Nuova Vet.* 31, 233-238. 2317

In tests with 70 fowls, prolonged administration of 2% tobacco powder in the food is stated to have had an inhibiting effect on the production of antibodies to Newcastle disease virus.—I. W. JENNINGS.

ORLANDELLA, V. (1955). Sulla presenza dei corpi inclusi di Keeney e Hunter nella congiuntivite umana da infravirus pseudo-pestoso aviare. [Failure to demonstrate inclusion bodies in human conjunctivitis caused by Newcastle disease virus.]—*Nuova Vet.* 31, 206-208. [German summary.] 2318

In two cases of human conjunctivitis, due to infection with Newcastle disease virus, the author failed to demonstrate inclusion bodies such as were described by Keeney & Hunter [*V.B.* 22, 1357].—I. W. JENNINGS.

FAHEY, J. E. (1956). **A virus in chronic respiratory disease of turkeys.**—*Nature, Lond.* 177, 90-91. 2319

A filtrable agent, which was resistant to antibiotics and could not be demonstrated with a variety of stains, was isolated from 2 outbreaks of chronic respiratory disease in turkeys. It produced lesions on the chorio-allantoic membrane of chick embryos. It was not neutralized by Newcastle disease, infectious bronchitis or infectious laryngotracheitis antisera.—M.G.G.

COVER, M. S., GELETA, J. N. & WALLER, E. F. (1956). **The etiology of an arthritic disease of chickens.**—*Amer. J. vet. Res.* 17, 12-15. [Authors' summary modified.] 2320

The isolation of an agent or agents from field cases of an arthritic condition in fowls is reported. The agent appears to be similar to that reported by Wills [*V.B.* 25, 2825] and by Olson *et al.* (1955).

NITZSCHKE, E. (1956). Untersuchungen über die Komplementbindungs- und Komplementbindungs-Hemmungs-Reaktion mit Hühner-Immunsereen gegen die Viren der atypischen und der klassischen Geflügelpest sowie der Schweine-Influenza. [Complement fixation and complement-fixation inhibition test with immune sera of fowls against the viruses of atypical and classical fowl pest and of swine influenza.]—*Zbl. VetMed.* 3, 75-87. [English, French and Spanish summaries.] 2321

Following the artificial infection of fowls with fowl plague, Newcastle disease or swine influenza viruses, their sera were examined by the complement-fixation inhibition and the complement-fixation tests, using homologous and heterologous antigens. The c.f. inhibition test was the more sensitive. The only heterologous cross reaction was obtained with the serologically related viruses of swine influenza and fowl plague.—W. G. SILLER.

FRITZSCHE, K., LIPPELT, H. & WEYER, F. (1956). Beiträge zur Epidemiologie, Diagnose und Therapie der Ornithose bei Tauben. [Psittacosis in pigeons.]—*Berl. Münch. tierärztl. Wschr.* 69, 61-67. [English summary.] 2322

The authors described mouse inoculation tests, c.f. tests and histological examinations carried out during a severe outbreak in a flock of 120 pigeons. Mouse inoculation tests of 55 eggs were negative. Chloramphenicol gave good results, each bird receiving orally 700 mg. over a period of 11 days.—M.G.G.

KAWAKAMI, Y., OMORI, T., FUKUWARA, S. & ISHII, S. (1954). [Isolation of a virus resembling *Miyagawanella bovis* (psittacosis lymphogranuloma group) from the faeces of cattle imported from the U.S.A.]—*Jap. J. vet. Sci.* 16, Suppl. pp. 33-34. [In Japanese English title p. 181.] 2323

Two strains of psittacosis-lymphogranuloma group viruses were isolated from the faeces of cattle imported from the U.S.A. Pathogenicity tests in laboratory animals

indicated a close relationship of these strains with the "Shizuoka" strain of bovine encephalomyelitis virus.—KOGI SAITO.

MATSUMOTO, M., OMORI, T., HARADA, K., INABA, Y., MORIMOTO, T., ISHITANI, R. & ISHII, S. (1955). [Studies on the disease of cattle caused by a psittacosis lymphogranuloma group virus (Miyagawanella). VI. Bovine pneumonia caused by this virus.]—*Exp. Rep. nat. Inst. Anim. Hlth, Tokyo*. No. 30, pp. 99-110. [In Japanese. Abst. from English summary.] **2324**

A virus, identified as a member of the psittacosis-lymphogranuloma group, isolated from 3 out of 5 cattle with pneumonia, was believed to be the infecting agent although streptococci and a species of *Haemophilus* were also present. The strains were identical with those previously isolated from cattle.

—M. B. HAWKSLEY.

RAMON, G. (1956). Porteurs et vecteurs de germes microbiens. [Carriers in relation to infections of animals with special reference to virus diseases.]—*Bull. Off. int. Epiz.* **45**, 8-49. [In English: pp. 50-91.] **2325**

R. discussed the role of carriers, food-stuffs, live vaccines and vaccinated animals in transmitting virus diseases; particularly rinderpest and F. & M. disease. He pointed out that the practice of placing imported animals in quarantine for a limited period is not entirely reliable. He stressed the importance of the slaughter policy and of prohibiting imports of animals from countries where disease exists; and urged that only by international collaboration can animal diseases be successfully controlled.—M.G.G.

JORDAN, R. T. & KEMPE, L. L. (1956). Inactivation of some animal viruses with gamma radiation from cobalt-60. — *Proc. Soc. exp. biol., N.Y.* **91**, 212-215. [Authors' summary modified.] **2326**

Gamma radiation from cobalt-60 proved

to be an effective method of inactivating Lansing poliomyelitis, St. Louis encephalitis, Western equine encephalomyelitis and vaccinia viruses. Partially purified suspensions of viruses were more vulnerable to gamma radiation than were crude suspensions. The smaller viruses required larger doses of radiation for inactivation than did the larger viruses.

DIETZ, O. & VOIGT, A. (1956). Untersuchungen zur Aetiologie der infektiösen Ceratoconjunctivitis des Rindes. [Aetiology of bovine infectious keratoconjunctivitis.] — *Berl. Münch. tierärztl. Wschr.* **69**, 47-50. [English summary.] **2327**

Rickettsia-like organisms were demonstrated in conjunctival smears and fluid from the anterior chambers of affected cattle, and in incubated eggs which had been inoculated with bacteria-free fluid from the anterior chambers. Two healthy calves developed typical symptoms after intraocular infection with egg-culture. Rickettsia-like organisms were again demonstrated.—M.G.G.

McNULTY, N., HARDING, H. B. & HEPLER, O. E. (1956). Comparison of two methods of primary incubation for viral and rickettsial complement-fixation tests. — *Amer. J. clin. Path.* **26**, 187-196. [Interlingua summary. Authors' summary modified.] **2328**

The water-bath and ice-box methods were compared. Under the conditions of these tests, except with those employing psittacosis antigens, the ice-box method proved to be more sensitive. The 3 psittacosis antigens that were studied were anticomplementary when tested by the ice-box method. Weak positive reactions occurred more frequently with the water-bath method. Most of these disappeared entirely when the same sera were tested by the ice-box method. A few of these sera gave very low titres by both methods whilst more of them gave higher titres with the ice-box method.

See also abst. 2377 (avian diseases transmissible to man).

IMMUNITY

POPOVICI, I. & GOGOAȘĂ, V. (1955). Cercetări asupra mecanismului acțiunii adjuvante imunogene a hidroxidului de aluminiu. Rolul focarului inflamator. [Mechanism of the adjuvant and immunogenic action of aluminium hydroxide. Role of the inflammatory focus.] — *Anu. Inst. Pat. Igien. anim.*,

București. **5**, 150-154. [In Roumanian. French and Russian summaries.] **2329**

Mice, injected subcutaneously with 0.3 ml. of *Pasteurella* broth culture mixed with aluminium hydroxide, were immune to subsequent infection with 100 m.l.d. of virulent culture, in spite of removal of the local lesion

and non-resorbed vaccine by extirpation and scraping 48 hours after immunization. Non-resorbed material at the site of inoculation rapidly lost its immunizing capacity. It is stated that the adjuvant action of aluminium hydroxide cannot be attributed to the local inflammatory reaction nor to the slow resorption of antigen from the site of inoculation.

—E.G.

MUSCHEL, L. H. & TREFFERS, H. P. (1956).

Quantitative studies on the bactericidal actions of serum and complement. I. A rapid photometric growth assay for bactericidal activity. II. Some implications for the mechanism of the bactericidal reaction.—*J. Immunol.* **76**, 1-10 & 11-19. [Absts. from authors' summaries.] **2330**

I. A rapid photometric assay method is presented for the titration of the bactericidal activity of antisera and complement.

II. The bactericidal reaction in a number of respects paralleled the haemolytic reaction: a stimulation by, if not an absolute requirement for, Mg ion and antibody-complement relations which could be expressed by identical equations. In a typical experiment 700-860 molecules of antibody and 1.5×10^7 molecules of complement were necessary to kill *Salmonella typhi* at the 50% end-point. This amount of antibody is calculated to cover 0.03-0.7% of the bacterial cell surface. Heating at 56°C. for a few min. decreased the bactericidal activity, particularly of weak sera, by partial destruction of antibody. Rabbit serum activated g. pig complement, human serum depressed it in the bactericidal but not in the haemolytic reaction. The relative titre

of 2 sera varied with heating and the species of complement used. Additional observations are presented on the Neisser-Wechsberg inhibition, and the mechanism of the bactericidal effect.

MUSCHEL, L. H. & MUTO, T. (1956). **Bactericidal reaction of mouse serum.**—*Science*. **123**, 62-63. **2331**

The lack of bactericidal effect of mouse serum on some Gram-negative organisms *in vitro* is due to deficiencies in the C2 and C3 components of its complement. This complement deficiency of mouse serum raises doubts concerning the validity of protection tests in mice for gauging the immunizing action of vaccines against Gram-negative organisms.

—A. ACKROYD.

ELLIOTT, R. A. & FERGUSON, L. C. (1956). **The incidence of antigen J in cattle and the production of anti-J by isoimmunization.**—*J. Immunol.* **76**, 78-82. [Authors' summary modified.] **2332**

Of 634 cattle tested 55.3% possessed the J antigen in the soluble form. In haemolytic tests for the cellular antigen, 34.5% reacted with one serum and 23.9% with the other serum; 37% of the J-positive animals were not detectable by the haemolytic test. Naturally occurring antibody was detectable in the sera of 23.5%. It was impossible to demonstrate either antigen or antibody in the sera of 21.2%. These animals are considered to be capable of producing antibody for J antigen. Isoimmunization with the J antigen in the form of whole blood, plasma-free r.b.c. or cell-free plasma stimulated the production of specific antibodies.

See also absts. 2159 (anthrax); 2162, 2166-2169 (TB.); 2170 (resistance to TB. in mice with brucellosis); 2175 (micro-complement-fixation test in Johne's disease); 2180-2183 (swine erysipelas); 2186-2188 (pasteurellosis); 2191 (dried salmonella antigens); 2194-2198 (brucellosis); 2220 (serological variants of *V. fetus*); 2333 (bovine contagious pleuro-pneumonia); 2255-2264 (F. & M. disease); 2267 (Aujeszky's disease); 2263-2278 (rabies); 2273 (influenza); 2282-2286 (rinderpest); 2290 (bluetongue); 2295-2299 (swine fever); 2311-2318 (Newcastle disease); 2321 (o.i. and c.f.-inhibition test in fowl plague, Newcastle disease and swine influenza); 2328 (two methods for virus and rickettsial c.f. test); 2426-2427 (blood groups in cattle).

PARASITES IN RELATION TO DISEASE [ARTHROPODS]

NEEL, W. W. (1956). **Tests with self-treating devices for the control of lice on cattle in Mississippi.**—*J. econ. Ent.* **49**, 138-140. [Abst. from author's summary.] **2333**

Back-rubbers impregnated with 5% chlordane in fuel oil or motor oil controlled lice on cattle confined in small fattening pens. A 5% conc. of toxaphene also gave effective control under the same conditions; but further tests are needed, as the results were taken

from only one group of animals. On large ranges, back-rubbers impregnated with 5% toxaphene and 0.3% benzene hexachloride in fuel oil, did not control lice.

HOLZ, J. (1956). *Hypoderma lineatum* und *Wohlfahrtia magnifica*, wirtschaftlich bedeutungsvolle Parasiten der kleinen Wiederkäuer Vorderasiens. [*H. lineatum* and *W. magnifica*, important parasites of small rumi-

nants in the Near East.] — *Berl. Münch. tierärztl. Wschr.* **69**, 94-96. [English summary.] **2334**

In Ankara, in 1954, about 70% of goats for slaughter were infested with the larvae of these flies; 2,500 sheep were also infested. The spraying of animals 3 times a year with aldrin is recommended.—M.G.G.

KILPATRICK, J. W. & SCHOOF, H. F. (1956). The use of insecticide treated cords for housefly control.—*Publ. Hlth Rep., Wash.* **71**, 144-150. **2335**

Fine cotton cords impregnated with 10% and 7.5% parathion-xylene solution and air dried for 3 weeks gave seasonal control (May to Sept.) of insecticide-resistant housefly populations when hung in "dairy barns" at a

total of 30 ft. of cord/100 sq. ft. floor area. Similar cords treated with "diazinon"-xylene solution gave 7 weeks' control. No signs of toxicity, as determined by the cholinesterase level, were observed in people handling the cords.—W. E. PARISH.

RAUN, E. S. & AHRENS, R. H. (1956). A field test of malathion to control sarcoptic mange of hogs.—*J. econ. Ent.* **49**, 140. [Authors' summary modified.] **2336**

Malathion sprays on pigs produced no gross symptoms of toxicity or skin irritation when applied at 0.5, or 2% concentrations. Pigs severely infested with *Sarcoptes scabiei suis* were sprayed with 0.5 or 1% malathion. Both concentrations cured the condition within 19 days.

See also absts. **2275** (transmission of Western equine encephalomyelitis by *Culex tarsalis*); **2287** (tick-borne fever in cattle); **2293** (tick-borne Kisenyi sheep disease).

PARASITES IN RELATION TO DISEASE [HELMINTHS]

KURTPINAR, H. (1955). Tetrechlorure de carbone'u deri altina şırınga ederek koyun ve keçilerin fascioliasis'inin tedavisi üzerinde yaptığımız ilk tecrübeler. [Preliminary observations on subcutaneous injection of carbon tetrachloride for liver fluke control in sheep.]—*Türk vet. Hekim. dern. Derg.* **25**, 2371-2373. [In Turkish; English summary.] **2337**

As a result of preliminary tests on 8 sheep and a goat with liver flukes, it is concluded that 2 ml. carbon tetrachloride administered subcutaneously was as effective as oral administration of the drug. There were no injection abscesses, no complications, and no mortality. Extensive trials of the method in heavily infested ruminants are planned.—H. ERGÜN.

FAIN, A. (1956). Nasal trichobilharziasis: a new avian schistosomiasis. — *Nature, Lond.* **177**, 389. **2338**

Five species of the genus *Bilharzia* were discovered in the nasal cavities of water fowls in the Belgian Congo. The adult schistosomes were found exclusively in the nasal veins, and the eggs in the nasal mucus. F. suggested that the cercariae of these flukes might cause dermatitis in human beings (and animals) bathing in infected water.—D. W. JOLLY.

DIAS, E. (1954). Guerra bacteriológica contra os hospedeiros intermediários da esquistossomose humana. [Bacteriological control of the intermediate hosts of human schistosomiasis.]—*Mem. Inst. Osw. Cruz.* **52**, 315-320. [English translation pp. 320-327.] **2339**

High mortality occurred among snails after treatment with peptonized broth culture of a spore-bearing bacillus [unspecified] isolated from the ovotestis of the mollusc *Australorbis glabratus*.—T.E.G.R.

WHITTEN, L. K. (1955). [Paramphistomiasis in sheep.—*N. Z. vet. J.* **3**, 144. **2340**

A short description of an outbreak of paramphistomiasis in 250 ewes, of which 35 died with symptoms of diarrhoea and anaemia. Many immature specimens of a fluke believed to be *Calicophoron ijimai* were found in the duodenum and forestomachs. Large numbers of snails (*Planorbis kahuiika*) were found on the pasture and were infected with developmental forms of paramphistome and echinostome flukes.—W. E. PARISH.

THORSHAUG, K. & ROSTED, A. F. (1956). Researches into the prevalence of trichinosis in animals in Arctic and Antarctic waters.—*Nord. VetMed.* **8**, 115-129. [In English. German and Norwegian summaries.] **2341**

During the period 1949-53 the authors examined specimens from 278 polar bears, 2556 seals, 74 walruses, 224 whales, 66 sharks and 4 dogs. *Trichinella* were demonstrated in 59% of polar bears, 9% of walruses, and in one dog. Infected specimens all came from the Northern and Eastern Ice areas. The degree of infection was usually moderate.

The incidence of infection was much higher in older animals, about 80% of older polar bears being infected.—M.G.G.

GOULD, S. E., GOMBERG, H. J., BETHELL, F. H., VILLELLA, J. B. & HERTZ, C. S. (1955). **Studies on *Trichinella spiralis*. I. Concerning the time and site of insemination of females of *Trichinella spiralis*. II. Time of initial recovery of larvae of *Trichinella spiralis* from blood of experimental animals. III. Effect on the intestinal phase of trichinosis of feeding massive numbers of irradiated trichina larvae. IV. Effect of feeding irradiated trichinella larvae on production of immunity to re-infection. V. Tests for a strain of trichina larvae resistant to radiation.**—*Amer. J. Path.* **31**, 933-963. **2342**

I. In *T. spiralis* copulation occurred as early as 30 hours after the larvae were ingested by rats. The anterior end of the female larva and all except the posterior end of the male were embedded in the mucosa of the villi, the posterior ends lying between the villi.

II. Blood examination revealed first stage larvae at 114 hours after ingestion, in the rat and rabbit, and at 120 hours in the dog and monkey.

III. *T. spiralis* that had not been subjected to cobalt-60 radiation caused severe dehydration, loss of weight and death. An equal number of Co⁶⁰ irradiated larvae caused slight diarrhoea and only slight loss of wt. during the first week. An equal or even greater number of larvae exposed to a larger dose of Co⁶⁰ radiation caused no ill effects. Irradiated larvae rapidly disappeared from the intestinal tract. It was concluded that trichinosed pork could be rendered harmless by irradiation with Co⁶⁰.

IV. Larvae that had been exposed to 10,000r Co⁶⁰ conferred a certain degree of immunity against non-irradiated larvae. On increasing the dose of irradiation to 18,000r Co⁶⁰ (which prevented the larvae from maturing to adult forms) little or no immunity resulted.

V. Larvae did not develop resistance to irradiation with cobalt-60.—T.E.G.R.

LEVINE, N. D., IVENS, V., KLECKNER, M. D. & SONDER, J. K. (1956). **Nematocidal screening tests of organic phosphorus, nitrofurans, cadmium and other compounds against horse strongyle larvae in vitro.**—*Amer. J. vet.*

Res. **17**, 117-120. [Authors' summary modified.] **2343**

In a study of the effect of 61 compounds on horse strongyle larvae in faeces, it was found that 7 of 8 organic phosphorus compounds, 7 of 9 cadmium compounds 2 of 5 nitrofurans, 4 of 13 heterocyclic compounds, 4 of 22 other cyclic compounds and one of 3 aliphatic compounds killed or prevented the development of larvae at a conc. of 0.01 M or less. The antibiotic, filipin, was inactive at a conc. of 0.4%. Compounds which were active at 0.001 M or lower were dimethylhydroxytrichlorophosphonate, methyltrichlorophenyl phosphoramidothioate, cadmium bromide, cadmium acetate and cadmium nitrate.

REDDICK, H. E., JR. (1955). **New formula in worming cattle.**—*Calif. Vet.* **8**, No. 7, pp. 19 & 36. **2344**

A mixture of 3 parts phenothiazine with one part carob flour (prepared from the pods of *Ceratonia siliqua*) was made up in the form of granules. Cattle readily ate food to which these granules had been added at the rate of 1½ oz. per animal per day for 2 days. The addition of carob flour seemed to overcome the unpalatable flavour of phenothiazine.

—R.M.

WHITLOCK, J. H. (1955). **A study of the inheritance of resistance to trichostrongylidosis in sheep.**—*Cornell Vet.* **45**, 422-439. **2345**

Resistance and susceptibility to trichostrongylidosis are considered to be hereditary. The view is also expressed that "parasitic disease can induce either depression or acceleration of growth" (the latter being due to stimulation of the appetite by the mild gastric irritation set up by the parasites).

—T.E.G.R.

CUNNINGHAM, M. P., JARRETT, W. F. H., MCINTYRE, W. I. M. & URQUHART, G. M. (1956). **The carrier animal in bovine parasitic bronchitis: A knacker and farm survey.**—*Vet. Rec.* **68**, 141-143. **2346**

In a survey at two knackeries in Scotland in Jan. to May 1955, 1,542 pairs of bovine lungs were examined, 181 of which (12%) harboured lungworms. Of the total, 452 were from herds which had been at pasture for one season; out of these 140 (31%) were infected as compared with 3.8% in the older cattle. Investigations at the farms of origin indicated that cattle may harbour lungworms for 6 months without re-infection.—W. E. PARISH.

KELLEY, G. W., OLSON, L. S. & GARWOOD, V. (1956). **A field evaluation of ascaricides in swine.**—*Vet. Med.* **51**, 97-101. **2347**

The following preparations were given, in the food, to pigs, 90-120 days old, at the recommended dosage:—cadmium anthranilate, piperazine adipate, betaine of 1-piperazine carbodithioic acid, sodium fluoride, and skim milk. The skim milk replaced the normal ration. Ascaricidal efficiency was assessed by estimation of the number of worms eliminated, and by faecal egg counts. Some ascarids were expelled by all treatments, and a 98-99% drop in the egg counts within 8 days of dosing, was observed except in the case of the skim milk. The cadmium compound was slower in the expulsion of the worms, and in the reduction of egg count, with a maximum reduction 8-21 days after administration. Forty-seven days after dosing, eggs were present in faeces of all groups, although in the case of piperazine adipate the count was only one egg per g. There was no evidence of toxicity in any group.—D. W. JOLLY.

CAVIER, R. & GAULIN, J. (1955). **Un nouvel anthelminthique: le dilaurate de diéthylène-diamine. [A new anthelmintic: piperazine dilaurate.]**—*Bull. Soc. Pat. exot.* **48**, 393-396. **2348**

In the abstract of this article published previously [see *V.B.* **26**, 1329] the drug

diethylenediamine dilaurate should have been referred to as piperazine dilaurate, this being the more widely used synonym.

ISHIHARA, T., OGATA, T., KAWATA, S., NINOMIYA, M. & MIKI, S. (1954). **[Prophylaxis of lumbar paralysis of sheep and goats by control of *Setaria* in cattle. I. Vermicidal effects of piperazine (1-diethyl-carbamyl-4-methylpiperazine citrate).]**—*Jap. J. vet. Sci.* **16**, Suppl. pp. 97-98. [In Japanese. English title p. 194.] **2349**

ISHIHARA, T., OGATA, T., UENO, H., NINOMIYA, M., KAWADA, S. & MIKI, S. (1954). **[Prophylaxis of lumbar paralysis of sheep and goats by control of *Setaria* in cattle. II. Prophylaxis for lumbar paralysis and the meaning of this method.]**—*Ibid.* pp. 98-99. [In Japanese. English title p. 194.] **2350**

I. Diethylcarbamazine acid citrate, 10 mg./kg. body wt. daily for 10 days, given to cattle by mouth, killed *Setaria* without ill effect on the host. At lower dosage it was ineffective. After 2 months 98.7% of the microfilariae were exterminated and only a few were found in 9 out of 32 cattle. No microfilariae were found P.M. during the following year.

II. The disease in sheep and goats could be prevented by the control of *Setaria* in cattle. This method proved more effective than prophylactic medication of sheep.—KOGI SAITO.

See also abst. 2379 (*O. cervicalis* present in "Kasen" disease of horses).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

MONLUX, A. W., ANDERSON, W. A., DAVIS, C. L. & MONLUX, W. S. (1956). **Adenocarcinoma of the uterus of the cow. Differentiation of its pulmonary metastases from primary lung tumors.**—*Amer. J. vet. Res.* **17**, 45-73. [Abst. from authors' summary.] **2351**

Out of 26 cases of uterine carcinoma lung metastases were observed in 22, lymph node metastases in 21, and peritoneal metastases in 14. A consistent gland-like pattern of growth and secondary sclerotic changes were characteristic microscopic features. Sixty-two cases of metastatic adenocarcinomas, regarded as probable uterine carcinomas, were compared with cases of uterine carcinoma. The available metastatic lung, peritoneal, and lymph node lesions were indistinguishable from metastatic lesions of uterine carcinomas.

Future investigations should prove the uterine carcinoma to be one of the most common of metastatic bovine carcinomas. Nine primary lung carcinomas were also described.

BATTAGLIA, S. & VERGA, G. (1955). **Carcinoma polmonare nel cane. [Pulmonary carcinoma in a dog.]**—*Nuova Vet.* **31**, 373-377. **2352**

A detailed description of a case of canine cyst - adenocarcinoma closely resembling jaagsiekte in its histological features.

—I. W. JENNINGS.

TEN THIJE, J. H. & RESSANG, A. (1956). **Über die Zunahme des primären Lungenkrebses beim Hund. [Increased incidence of primary lung cancer in dogs.]**—*Dtsch. tierärztl. Wschr.* **63**, 17-18. **2353**

In a total of 9,784 P.M. examinations of dogs during the period 1924-54, 22 cases of

primary cancer of the lungs were found. Of these, 16 occurred in the last 4 years of the period ($P < 0.01$). Brief details are given of the age, breed and sex incidence, the site and type of the lesions (16 out of 18 were columnar cell carcinomas) and the presence of metastases (seen in 16 cases). A fuller description of the cases will be published elsewhere.—E. COTCHIN.

VON SANDERSLEBEN, J. (1956). Maligne Geschwülste im Magen des Hundes. [**Malignant tumours in the stomach of the dog.**]—*Mh. Tierheilk.* **8**, 1-8. **2354**

Detailed pathological descriptions are given of two malignant neoplasms of the stomach, both in male dogs: carcinoma in a 9-year-old Scottish Terrier, and lymphosarcoma in a 7-year-old Cocker Spaniel.

—E. COTCHIN.

BENSON, J., LEV, M. & GRAND, C. G. (1956). Enhancement of mammary fibroadenomas in the female rat by a high fat diet. — *Cancer Res.* **16**, 135-137. [Authors' summary modified.] **2355**

Rats of various ages were fed diets designed to lower or raise the serum lipid levels. Mammary fibroadenomas developed in females aged 18 months or more. There was an increased occurrence of tumours in animals fed a high fat diet. This is considered to be due to hypernutrition and the specific action of fat in tumour genesis. Serum lipid levels were higher in the experimental animals, suggesting that hyperlipaemia is related to tumour genesis.

ENGLERT, H. K. (1955). Die Leukose des Schweines. [**Leucosis in pigs.**] — *Zbl. Vet-Med.* **2**, 607-628; 764-801. [English, French and Spanish summaries.] **2356**

A detailed account is given of the pathological findings in 30 cases (27 of lymphatic, one of myeloid, one of plasma-cell and one of erythro-leucosis) diagnosed in meat-inspection

material submitted for laboratory examination in 1952-53. The organs principally affected were the lymph nodes, spleen, kidneys, liver and bone marrow; 22 of the 25 pigs were under one year of age, 8 being under 6 months. Most of the pigs had had symptoms, chiefly of diminished or lost appetite.—E. COTCHIN.

ISHIGURO, H. & KAKUTANI, S. (1954). [Experimental studies of transmission of avian leucosis complex. I. Transmission experiment in chickens.]—*Jap. J. vet. Sci.* **16**, Suppl. p. 70. [In Japanese. English title p. 188] **2357**

A cellular suspension of avian visceral lymphoma tissue was inoculated into the pectoral muscle of 18-day-old chicks and passaged to 7-day-old chicks. In some of the chicks, infiltration of lymphocytes was observed in the myocardium.—KOGI SAITO.

ANON. (1955). Lymphomatosis in chickens.—*Circ. U.S. Dep. Agric.* No. 970, pp. 17. **2358**

This booklet, prepared by the East Lansing Poultry Research Laboratory, presents the results of research on lymphomatosis in a form intelligible to the layman and useful for the research worker. It mentions the distribution, economic importance and history of the disease in the U.S.A. and describes with illustrations the symptoms and P.M. findings in the visceral, neural and ocular forms, but no mention is made of the marked similarity that may exist between organs affected with visceral lymphomatosis and lymphoid leukaemia. Osteopetrosis and fowl leukaemia are considered to be associated diseases, their exact relationship to lymphomatosis requiring further research. The aetiology and transmission of the 3 forms of the disease are discussed, and the factors influencing the resistance of the fowl to lymphomatosis are described. Prevention is best obtained by selective breeding, and rearing in isolation. There are 40 references.

—F. T. W. JORDAN.

NUTRITIONAL AND METABOLIC DISORDERS

JOYCE, J. M. (1955). Posterior paralysis in pigs. Summary of a Northland survey, 1954.—*N. Z. vet. J.* **3**, 157-158. [Author's summary modified.] **2359**

In many cases the condition seems to be due to copper deficiency. In other cases, it responds to treatment with fish-liver oil administered over a period of time.

'T HART, M. L. & KEMP, A. (1956). De invloed van de weersomstandigheden op het optreden van kopziekte bij rundvee. [**Influence of weather conditions on the occurrence of grass-tetany in cattle.**]—*Tijdschr. Diergeneesk.* **81**, 84-95. [In Dutch. English, French and German summaries. Abst. from English summary.] **2360**

The incidence of grass tetany in cattle was low in the spring when the temp. was above 14°C.; it was higher when the rate of growth of the grass was rapid. It rose considerably when the temp. dropped below 14°C., especially after a heavy rainfall at the end of summer.—T.E.G.R.

PIETERSE, P. J. S. & ANDREWS, F. N. (1956). **The estrogenic activity of alfalfa and other feedstuffs.**—*J. Anim. Sci.* **15**, 25-36. **2361**

The oestrogenic activity of lucerne was highest in the early budding stage of the first crop. It was higher in the leaves than in the flowers and it was lowest in the stems. Significant activity was detected in wheat, rye, oats and some clovers; there was none in fish meal, fish solubles and dried distillers' solubles. There was detectable activity in soya bean oil meal and mouldy maize.—T.E.G.R.

EVSSEV, N. K. & SIDOROV, P. A. (1955). **[Experience of the use of antibiotics.]**—*Veterinariya, Moscow*. **32**, No. 8, pp. 58-61. **[In Russian.]** **2362**

Penicillin, biomycin-hydrochloride, the calcium salt of biomycin, and a waste product of biomycin production, the mycelia, were tested as food supplements for chickens. All were effective growth stimulants and reduced losses. They were similarly used for the feeding of calves and had a prophylactic effect against gastro-enteritis.—A. MAYR-HARTING.

LUCKEY, T. D., GORDON, H. A., WAGNER, M. & REYNERS, J. A. (1956). **Growth of germ-free birds fed antibiotics.**—*Antibiot & Chemother.* **6**, 36-40. [Spanish summary pp. 76-77. Authors' summary slightly modified.] **2363**

Growth data from limited numbers of 4-week-old germ-free chicks and turkey poults are presented. Relatively high levels of different dietary antibiotics produced no growth increase in chicks. Results with chloramphenicol and streptomycin were inconclusive. Lower levels of oxytetracycline (25 mg./kg.) and procaine penicillin (11 mg./kg.) in the diet of germ-free chicks allowed slight growth increments. Procaine penicillin (46 mg./kg.) produced a statistically significant increase in the growth rate of germ-free poults.

VALLENAS, P. G. A. (1956). **Effects of the glycemic levels on rumen motility in the sheep.**—*Amer. J. vet. Res.* **17**, 79-89. **2364**

In sheep, hypoglycaemia due to insulin resulted in stimulation of rumen contractions,

and was counteracted by glucose, which would also produce hyperglycaemia and inhibition of rumen motility. Fructose produced similar inhibition when infused slowly, but not when injected as a single dose.—F. R. PAULSEN.

BUNDING, I. M., DAVENPORT, M. E., JR. & SCHOOLEY, M. A. (1956). **The glucose tolerance test in swine and its implications.**—*J. Anim. Sci.* **15**, 234-241. [Authors' summary modified.] **2365**

Data are presented which indicate that a "diabetes-like" syndrome may exist in pigs and that the ability to tolerate glucose may be associated with other individual characteristics.

ANDERSON, J. P. & ANDREWS, E. D. (1955). **The effect of phenothiazine on cobalt-deficient and cobalt-dosed lambs.**—*N. Z. vet. J.* **3**, 150-151. [Authors' summary copied verbatim.] **2366**

Cobalt-deficient lambs dosed regularly with phenothiazine showed a higher mean weight gain and a lower death rate than untreated controls, but differences were not statistically significant. On cobalt-deficient pasture, lambs dosed regularly with both cobalt and phenothiazine made no greater mean weight gain than those dosed with cobalt alone.

CARTWRIGHT, G. E., GUBLER, C. J., BUSH, J. A. & WINTROBE, M. M. (1956). **Studies on copper metabolism. XVII. Further observations on the anemia of copper deficiency in swine.**—*Blood*. **11**, 143-153. [Interlingua summary.] [Authors' summary modified.] **2367**

The morphology of the r.b.c. was studied in 22 normal pigs, 65 pigs deficient in copper, and 16 deficient in iron. The mean values (\pm the standard deviation) for the volumes of packed r.b.c. in the 3 groups were 42 ± 2.5 , 21 ± 6.6 , and 21 ± 6.1 ml./100 ml. respectively; for the mean corpuscular volumes 55 ± 3.1 , 43 ± 7.1 , and 36 ± 5.3 ; and for the mean corpuscular haemoglobin concentrations 33 ± 1.1 , 29 ± 2.3 , and 28 ± 3.0 . The addition of 11 water-soluble B vitamins, 4 fat-soluble vitamins, ascorbic acid, and minerals (with the exception of copper) to the copper-deficient milk diet did not prevent or delay the development of anaemia, modify the morphology of the r.b.c. or alter the degree of hypoferraemia. The normoblasts in the marrow of a copper-deficient pig were morphologically similar to

those in a pig deficient in iron. The i/v administration of one g. of iron before the development of copper deficiency, did not delay or prevent the development of anaemia. It was concluded that the anaemia of copper deficiency in pigs is morphologically similar to that due to iron deficiency.

CUNNINGHAM, I. J. (1954). **Molybdenum and animal health in New Zealand.**—*N. Z. vet. J.* **2**, 29-36. **2368**

Excess of molybdenum in fertilizers causes a lowering of the body stores of copper, particularly the liver copper, of grazing cattle and sheep; it causes bone weakness and a reduction of growth rate, of pigmentation and of wool crimp. Scouring also occurs.

—T.E.G.R.

NEHER, G. M., DOYLE, L. P., THRASHER, D. M. & PLUMLEE, M. P. (1956). **Radiographic and histopathological findings in the bones of swine deficient in manganese.**—*Amer. J. vet. Res.* **17**, 121-128. [Authors' summary modified.] **2369**

Mn deficiency in 9 pigs resulted in lameness, short legs, thickening of the bone in the carpal and tarsal areas, and marked bowing of the fore legs in 6 of the animals. After maturation lameness disappeared, but the deformities remained. Radiographic and histological examination revealed a selective retardation of endochondral osteogenesis in the growth discs of the radii, whereas the ulnas continued to grow. A generalized rarefaction of bone with areas of complete aplasia in the distal diaphysis of the ulnas was observed in all deficient animals examined on the 110th and 125th days. On the 335th day, no rarefied areas were present. These lesions were similar to the localized form of osteitis fibrosa and were characterized by the replacement of cancellous bone with a dense fibrous tissue which was moderately vascular. Neo-osteoid extensions proximal to the growth discs and adjacent to the aplastic lesions were typical. The lipotropic action of Mn was demonstrated by excessive obesity as well as increased deposition of fat in the bone.

SWINGLE, K. F., SAFFORD, J. W. & McROBERTS, D. E. (1956). **Tocopherol levels of the early milks of semirange cattle.**—*Amer. J. vet. Res.* **17**, 28-35. **2370**

Tocopherol in colostrum of beef cows, 1 to 4 days after parturition, varied from 18 to 1,537 μg . per 100 ml. or 40 to 737 μg . per

g. of fat; and in milk, 8 to 32 days after parturition, from 16 to 501 μg . per 100 ml. or 45 to 275 μg . per g. of fat. Dairy cows gave similar results. There was no evidence of correlation between tocopherol deficiency and white muscle disease.—F. R. PAULSEN.

NELSON, M. M., BAIRD, C. D. C., WRIGHT, H. V. & EVANS, H. M. (1956). **Multiple congenital abnormalities in the rat resulting from riboflavin deficiency induced by the antimetabolite galactoflavin.**—*J. Nutr.* **58**, 125-134. [Abst. from authors' summary.] **2371**

Little effect on foetal development was observed when female rats were given diets deficient in riboflavin during gestation. However, when the deficiency was accentuated by the addition of galactoflavin for the entire gestation period or for only 4 to 6 days early in gestation, a high incidence of foetal death or congenital abnormalities resulted.

RICHARDSON, L. R. & BROCK, R. (1956). **Studies of reproduction in rats using large doses of vitamin B₁₂ and highly purified soybean proteins.**—*J. Nutr.* **58**, 135-145. [Abst. from authors' summary.] **2372**

There was no evidence that large doses of vitamin B₁₂ in the diet of the mother were toxic to the offspring. Without the vitamin, the average weaning weight and the percentage of litters and young weaned were less than with the vitamin.

OLOUFA, M. M. (1955). **Effect of thyroprotein on the growth of Egyptian baby chickens.**—*Poult. Sci.* **34**, 1292-1294. [Author's summary modified.] **2373**

A total of 320 chicks were used to study the effect of 2 dosages of thyroprotein on growth rate from hatching until 12 weeks of age. Both dosages, especially the higher one, caused a depression in growth rate and an increase in mortality rate.

PARRY, H. B. (1956). **Prevention of toxæmia of late pregnancy in sheep.**—*Nature, Lond.* **177**, 288-289. **2374**

In some 50 lowland flocks, antenatal care consisting of the restriction of weight gains in early pregnancy, provision for exercise and ensurance of good gains in the last 6-8 weeks of pregnancy considerably reduced the incidence of pregnancy toxæmia.—M.G.G.

PARRY, H. B. & TAYLOR, W. H. (1956). **Renal function in sheep during normal and toxæmic pregnancies.**—*J. Physiol.* **131**, 383-392.

[Authors' summary modified.] **2375**

Twelve pregnant toxæmic sheep had impaired renal function when compared with 10 normal pregnant sheep, as revealed by raised blood urea and plasma creatinine concentrations, lowered urea and endogenous and exogenous creatinine clearances, lowered renal plasma and blood flows, and lowered ratios of exogenous creatinine clearance/renal plasma

flow and exogenous creatinine clearance/renal blood flow. Impairment of renal function in toxæmic sheep does not result from changes in blood pressure or dehydration, but is a fundamental, though as yet unexplained, part of the disorder. The pattern of renal dysfunction in toxæmic sheep is compared briefly with that observed in toxæmia of late pregnancy in human beings.

DISEASES, GENERAL

BABINTSEV, G. F. (1955). [Kalachakski region, Kherson province, Ukraine, declared free from infectious diseases.] — *Veterinariya, Moscow*, **32**, No. 8, pp. 31-32. [In Russian.] **2376**

In 1954, only six pigs and no cattle or sheep died in this district from infectious disease. TB., brucellosis, F. & M. disease and swine erysipelas appear to have been stamped out entirely.—A. MAYR-HARTING.

ZURECK, F. (1955). Vom Vogel auf den Menschen übertragbare Zoonosen. [Avian diseases transmissible to man.]—*Arch. Geflügelk.* **19**, 433-447. [English summary.] **2377**

The causal agents of some 25 diseases of domestic and wild birds may be transmitted to man and cause symptoms of varying severity. The more important of these are discussed briefly. They include *Salmonella typhi-murium*, *S. dublin*, *S. enteritidis*, *S. gallinarum* and *S. pullorum* as causes of food poisoning, *Erysipelothrix (Listeria) monocytogenes*, usually fatal in man, psittacosis, tularaemia, botulism, Q fever, toxoplasmosis, avian TB., *E. rhusiopathiae* infection and Newcastle disease.—W. G. SILLER.

GUL'EV, P. K. (1955). [Mild form of contagious pleuro-pneumonia in horses.]—*Sborn. nauch. Trud. Leningr. Inst. Usovshenst. vet. Vrach.* **10**, 200-201. [In Russian.] **2378**

Outbreaks of contagious pleuro-pneumonia affected 430 horses (7.4% of the horses) on 12 farms in the Chuvash A.S.S.R. 301 of the cases occurred between spring and autumn, and 71% were of the mild type, characterized by rise in body temp., diminution of appetite and lassitude, lasting for about 3 days. During winter this mild course was seen in 43% of affected horses.—R.M.

NAKAMURA, R., MATSUHASHI, A., YAMASHITA, J., SATOH, H., HARADA, F. & NAKAJIMA, Y.

(1955). Studies on "Kasen" of horses in Hokkaido. II. Results obtained in 1954.—*Jap. J. vet. Res.* **3**, 73-81. [In English.] **2379**

Clinical, haematological, parasitological and histopathological findings in 18 cases are reported. *Onchocerca cervicalis* was found in two cases. Infiltration with eosinophiles occurred in the lesions. Some clinical improvement followed treatment in a few cases with antimony or antihistaminic compounds by injection. [For part I, see *V.B.* **26**, 553.]

—M. B. HAWKSLEY.

RALEIGH, R. J., BINNS, W., SHUPE, J. LE G., HARRIS, L. E. & MADSEN, L. L. (1955). Studies on a cattle disease of unknown origin in southeastern Utah.—*J. Anim. Sci.* **14**, 951-963. **2380**

"Brisket disease" affects 1-5% of range cattle in southeastern Utah and is characterized by inappetence, diarrhoea, general unthriftiness and oedema of the throat region, brisket and underside of the body. Mortality is 100% in untreated cases. The cause of the condition is unknown, but nutritional deficiency and/or toxicity is suspected. Affected animals are stated to have recovered when given a supplement of lucerne hay.—T.E.G.R.

ȘERBĂNESCU, C. & ȘIRBU, Z. (1955). Modificările macro și microscopice în cistita hemoragică a taurinelor. [Macroscopic and microscopic lesions in bovine chronic haematuria.]—*Anu. Inst. Pat. Igien. anim., București.* **5**, 166-182. [In Roumanian. French and Russian summaries.] **2381**

The authors studied lesions in organs of 74 cattle affected with chronic haematuria, 69 of which were 6-11 years old. Lesions in the bladder were localized in the mucosa and submucosa. There was hyperplasia of connective tissue, haemorrhagic congestion, oedema, vascular dilatation, haematoma, cellular infiltration and cyst and ulcer formation. Lesions in kidneys, the renal pelvis, ureters, urethra,

spleen, liver, lungs, thyroid and adrenal glands were characterized by congestion, hyperplasia of connective tissue and angioectasis. The disease is thought to be caused by a toxic substance of nutritional origin.—E.G.

DEKKER, N. D. M. (1956). De Headsche zone-proef als diagnostisch hulpmiddel bij traumatische gastritis. [**Referred pain as a diagnostic aid in traumatic gastritis in cattle.**]—*Tijdschr. Diergeneesk.* **81**, 96-106. [In Dutch, English, French and German summaries. Abst. from English summary.] **2382**

Traumatic gastritis (confirmed surgically and/or P.M.) was diagnosed in 180 animals. The results and the diagnostic value of the tests applied are discussed.—T.E.G.R.

TERENT'EV, F. A. & STEFANOVA, E. P. (1955). [**Overheating of the body as one cause of pulmonary disease in lambs on the steppes.**]—*Veterinariya, Moscow.* **32**, No. 8, pp. 54-57. [In Russian.] **2383**

The temperature of lambs during the summer heat was found to be up to 2°C. above normal, and to remain so for many hours during the day. This over-heating is accompanied by increased respiration and with it is suggested, consequent increase in pulmonary infections. Lambs born early in the year have, by high summer, developed a relatively good thermoregulation, but the losses amongst lambs born in May and June are heavy. On one state farm, where a structure was erected to give shade to a flock of ewes with their lambs from 10-11 a.m. until 3-4 p.m., the losses were 5-7 times less than in a herd exposed to the sun all day.

—A. MAYR-HARTING.

KILCHSPERGER, G. (1956). Zur Differenzierung einiger klinischer Begriffe beim Schwein. [**Differentiation of some clinical syndromes in pigs.**]—*Schweiz. Arch. Tierheilk.* **98**, 76-85. [English, French and Italian summaries.] **2384**

K. divided the more common diseases of pigs into 3 main groups: pneumonia, caused by viruses, bacteria or parasites; paralysis, infectious and non-infectious; and a third group consisting of atrophic rhinitis, necrotic rhinitis and nasal osteofibrosis. Epidemiology, symptoms, P.M. findings and control of individual diseases were described briefly.

—M.G.G.

SHUMAN, R. D., EARL, F. L. & STEVENSON, J. W. (1956). **Atrophic rhinitis. VI. The establishment of an atrophic rhinitis-free herd of hogs.**—*J. Amer. vet. med. Ass.* **128**, 189-192. [Authors' summary modified.] **2385**

An atrophic rhinitis-free herd of pigs was established by removing the piglets from the sow at birth, using sanitary precautions, and hand-raising them in isolation.

GORTSEVSKI, S. A. (1955). [**Symposium on diseases of pigs. Pathogenesis of porcine atrophic rhinitis.**]—*Veterinariya, Moscow.* **32**, No. 11, pp. 38-39. [In Russian.] **2386**

G. examined pathological material from 14 sick pigs, 4-11 months old. The fundamental pathological change was degeneration of the peripheral nerves in the nose leading to a disturbance in the nutrition of the mucous membrane. Destruction of the connective tissue, bone and cartilage follow. Blood vessels are also destroyed causing nasal bleeding. The degenerative changes spread to the maxilla, sinuses, pituitary gland and brain, and can also be found in the ganglia of the sympathetic trunk.—A. MAYR-HARTING.

GRIEM, W. (1955). Nebennieren und Herztod des Schweines. [**The adrenal glands in fatal syncope of pigs.**]—*Mh. VetMed.* **10**, 626-629. **2387**

In 52 pigs which had died from fatal syncope, the adrenal glands were smaller and lighter and the adrenal cortex was narrower than in normal pigs. Histological examination indicated a severe subnormal functioning of the glands. Through exhaustion of the adrenal cortex by means of diphtheria toxin, G. succeeded in reproducing in 5 experimental pigs the gross and histological changes characteristic of fatal syncope. He suggested that fatal syncope is due to the disturbances in the adrenal-pituitary system which result from a diet deficient in protein. [See also *V.B.* **23**, 2905.]—M.G.G.

SCHULZ, L. -C. (1956). Partielle Rückenmarkserweichung und Paralyse der Schulterextremitäten bei einem Schwein. [**Partial degeneration of the spinal cord and paralysis of the fore limbs in a pig.**]—*Dtsch. tierärztl. Wschr.* **63**, 89-92. **2388**

Complete softening of the ventral horns in the region of the brachial plexus with secondary degeneration of the peripheral nerves is described in a 13-week-old pig.

—M.G.G.

DAHME, E. (1956). Die Morphologie der Nephrosen des Hundes unter Berücksichtigung der Klinik. [Morphology of nephroses in dogs with reference to symptoms.]—*Dtsch. tierärztl. Wschr.* **63**, 49-53. **2389**

D. attempted to correlate the pathological and clinical characteristics of various types of nephrosis occurring in dogs.—R.M.

THORDAL-CHRISTENSEN, A. & COFFIN, D. L. (1956). Pancreatic diseases in the dog.—*Nord. VetMed.* **8**, 89-114. [In English. German and Danish summaries.] **2390**

From P.M. examination of 1,500 dogs in Boston, U.S.A., 43 cases of pancreatic disease were diagnosed. Four types were distinguished: acute necrotic, chronic, atrophy of the acinar pancreatic tissue, and fibrosis. The aetiology was discussed. There are 12 photographs.—M.G.G.

PEARSON, C. M. (1956). Development of arthritis, peri arthritis and periostitis in rats given adjuvants.—*Proc. Soc. exp. Biol. N.Y.* **91**, 95-101. [Author's summary and conclusions modified.] **2391**

A reproducible generalized or focal arthritis, synovitis, periostitis and tendinitis was induced in rats by i/d injections of a Freund-type adjuvant which was most potent when macerated striated muscle tissue was added to the inoculum. The pathogenic mechanisms responsible for these changes are not known.

SIEBURTH, J. McN. & POMEROY, B. S. (1956). Experimental transmission of a catarrhal enteritis of chicks similar to bluecomb disease.—*Amer. J. vet. Res.* **17**, 24-27. [Authors' summary modified.] **2392**

A catarrhal enteritis of young fowls resembling bluecomb disease was readily transmitted through 15 serial passages in the day-old chick by the oral administration of suspensions of infected intestines. Infected chicks developed a catarrhal enteritis as well as a characteristic depression of temp. and growth rate. Mortality ranged from 37 to 95% with an av. of 67% during an experimental period of 12 days. When the drinking water was supplemented with certain antibiotics mortality declined and infected chicks gained weight slightly. Unlike turkey bluecomb disease which appeared to be species specific, this disease affected poults as easily as chicks.

FEYEL-CABANES, T. (1956). Localisation des athéromes dans l'athérosclérose spontanée ou expérimentale du poulet. [Localization of atheromas in spontaneous or experimental arteriosclerosis in fowls.]—*C.R. Acad. Sci., Paris.* **242**, 1384-1386. **2393**

The localization of atheromas seemed to depend on the presence of sympathetic ganglia in the immediate vicinity of the vascular adventitia. The structure of the ganglion cells varied according to the age of the atheroma.—R.M.

DOUGHERTY, E., SAUNDERS, L. Z. & PARSONS, E. H., JR. (1955). The pathology of infectious serositis of ducks.—*Amer. J. Path.* **31**, 475-487. **2394**

Infectious serositis of ducks, a disease characterized by generalized fibrinous inflammation of the serous membranes, was diagnosed P.M. in 2,216 of 7,155 ducks over a period of 4 years. About 55% of these were 2-8 weeks old. There was fibrinous, adhesive pericarditis, in some instances involving the myocardium. The liver was enlarged and covered by a yellowish fibrinous membrane; hepatic and renal vessels were congested. The spleen was enlarged, pale and mottled. In one third of the female ducks the oviducts were distended by a caseous exudate. A mucopurulent exudate was present in the alimentary canal and nasal sinuses. Air sac membranes were thickened and opaque. The lungs were free from lesions. There was fibrinous cerebrospinal meningitis. The causal agent was not identified but it is stated that the pathology is suggestive of a virus of the psittacosis group. The disease was transmissible to ducks by the intra-tracheal and intraperitoneal routes using organ suspensions and serosal exudate. The authors stated that clinically the disease closely resembled and might be identical with "new duck disease" described by Hendrickson & Hilbert in 1932 [*V.B.* **3**, p. 178] and "duck septicaemia" described by Graham *et al.* in 1938 [*V.B.* **9**, p. 7]. The authors of both these papers, however, gave as the causal agent *Pfeifferella anatipestifer* with which experimental reproduction of the disease was claimed. [See also Asplin (*V.B.* **26**, 1125) and Taylor (*V.B.* **26**, 1126).]—E.G.

NEUMANN-KLEINPAUL, K. & ZELLER, R. (1955). Spätschädigungen der Haut nach Röntgenaufnahmen bei einem Pferd. [Cutaneous lesions in a horse as late after-effects of X-ray

photography of the hip joint. — *Wien. tierärztl. Mschr.* **42**, 804-807. [English, French and Italian summaries.] **2395**

Four 2-sec. exposures of the hip region of a horse to X-rays, each of 1,600 r., produced depigmentation, gangrene and scab formation where the tube of the apparatus was in contact with the skin. Lesions were present 27 months later.—M.G.G.

GARCIA, J., KIMELDORF, D. J., HUNT, E. L. & DAVIES, B. P. (1956). **Food and water consumption of rats during exposure to γ -radiation.** — *Radiation Res.* **4**, 33-41. [Authors' summary modified.] **2396**

During protracted exposure to low-intensity γ -radiation, food and water consumption and body weight decreased. The effect was apparent during a single 8-hour exposure to 75r. The decrease in water consumption became progressively more severe with repeated exposure. Two of 3 experiments indicated that food consumption also altered according to the number of exposures.

The decrease in water and food consumption appeared to be restricted to the actual period of exposure, since consumption between irradiations was at least that of controls. It was suggested that the changes in food and water consumption were due to the effects of radiation upon gastro-intestinal function.

STOHLMAN, F., JR. & BRECHER, G. (1956). **Stimulation of erythropoiesis in sublethally irradiated rats by a plasma factor.** — *Proc. Soc. exp. Biol., N.Y.* **91**, 1-4. [Authors' summary modified.] **2397**

Injection of plasma from anaemic donors into rats immediately after exposure to sublethal doses of X-rays produced a statistically significant increase in erythropoiesis as measured by Fe^{59} incorporation. The factor in anaemic plasma was non-dialysable and was not present in the supernatant obtained after precipitation of protein by heating. Normal plasma produced a variable response. Use of sublethally irradiated rats in the study of regulation of erythropoiesis is suggested.

POISONS AND POISONING

HUPKA, E. (1955). **Über Flugstaubvergiftungen in der Umgebung von Metallhütten. [Poisoning by fume deposits on pasture in the vicinity of metal works.]** — *Wien. tierärztl. Mschr.* **42**, 763-775. [English, French and Italian summaries.] **2398**

Illness affecting cattle and horses at pasture within a radius of 5 km. from each of two lead and zinc foundries in Germany was characterized by poor bodily condition, and later by emaciation and pronounced swelling of the limb joints, causing severe lameness and necessitating casualty slaughter. P.M. examination revealed an increased volume of synovial fluid in affected joints, and detachment of the articular cartilage from the bone.

The condition was reproduced by feeding to 2 foals samples of dust collected in the vicinity of the works. One sample contained 45% Pb and 5% Zn and the other 17% Pb and 23% Zn. Only traces of arsenic and fluorine were present. The liver of cattle and horses grazing affected pastures contained abnormally high amounts of Pb (up to 27 mg.%) or Zn (up to 3,000 mg.%) or both.

Paralysis of the recurrent nerve ("roaring") was unusually prevalent in the affected areas, and was attributed to Pb poisoning. H. suggested that the peculiar

clinical picture of the poisoning was due to Pb in combination with another toxic substance, probably zinc.—R.M.

AKMAN, Ş. (1955). **Murgul Bakir işletmesi bacalarından çıkan kükürt dioksit gazları ile bulaşmış otları yiyen hayvanlarda sülfürik asit ile zehirlenme olayları üzerinde araştırmalar. [Sulphur dioxide poisoning in animals grazing in the vicinity of a copper works.]**—*Vet. Fak. derg.* **2**, 24-52. [Abst. from English summary.] **2399**

Sulphuric acid was detected, by chemical analysis, in samples of hay and corn from areas in the vicinity of a copper factory. The clinical symptoms and pathological changes in experimental sulphuric acid and sulphur dioxide poisoning were studied. The erection of a plant for the conversion of sulphur fumes from factory chimneys into artificial fertilizers is recommended.—T.E.G.R.

CORSICO, G. (1955). **Sui reperti istomorfologici sulla istogenesi della osteopatia da fluorosi nel bovino. [Histopathology of bones in bovine fluorosis.]** — *Clin. vet., Milano.* **78**, 385-392. [English summary.] **2400**

Some of the current views on the pathogenesis of bone in chronic fluorine poisoning of cattle are discussed. The main changes are

osteoporosis and osteomalacia accompanied, in some cases, by periostosis. It is considered that the lesions are influenced by the age and general condition of the subject and by the duration and severity of intoxication.

—T.E.G.R.

HERMAN, J. R. (1956). **Fluorine in urinary tract calculi.**—*Proc. Soc. exp. Biol., N.Y.* **91**, 189-191. [Author's summary modified.] **2401**

Fluorine was found in high concentration in 8 out of 10 urinary tract calculi obtained from human patients.

JARRETT, I. G. & PACKHAM, A. (1956). **Response of the sheep to sublethal doses of fluoroacetate.**—*Nature, Lond.* **177**, 580-581. **2402**

The experimental sheep were divided into three diet groups receiving wheat chaff, lucerne chaff and wheat chaff plus gluten respectively. Sodium fluoracetate was administered daily to each group by different routes (oral, subcutaneous and by continuous drip into the abomasum, the peritoneal cavity or the jugular vein). In the first group symptoms followed administration by any route. These included inappetence, muscular incoordination and tremors, convulsions and death, apparently from heart block. In the second group symptoms were delayed when the fluoracetate was administered *per os* or subcutaneously; but death, without the previous characteristic syndrome, supervened when the route of administration was intravenous or abomasal. In the third group, animals given fluoracetate *per os* or subcutaneously showed no symptoms for periods up to 45 days. A daily supplement of 20 g. each of acetic acid and propionic acid did not prevent symptoms in the case of three animals on wheat chaff. The symptoms were not closely correlated with the concentrations of citrate in the blood.—T.E.G.R.

FRAZÃO, T. L. (1955). **Algumas considerações sobre a embriaguez dos bovinos no vale do Sado. ["Drunkenness" in cattle in Portugal, a nervous condition due to *Claviceps paspali* poisoning.]**—*Bol. pecuar.* **23**, No. 2, pp.29-42. **2403**

A general account of *Claviceps paspali* poisoning of cattle in the Sado valley. The condition, characterized by a staggering gait, affected cattle grazing rice fields, which contained *Paspalum distichum*. Virus encephalo-

myelitis was suspected at one stage but was ruled out on clinical and epidemiological grounds.—T.E.G.R.

MULLINS, J. (1955). **Acorn poisoning in sheep.**—*N. Z. vet. J.* **3**, 159. [Author's summary modified.] **2404**

Ten cases of presumed acorn poisoning in sheep are reported. Deaths occurred from 4 to 10 days after access to, and up to 5 days after removal from acorns. The ingestion of acorns in quantity was evident in the case examined, of which the P.M. findings are given.

McMEEKAN, C. P. (1955). **Common misconceptions about facial eczema control in sheep and cattle.**—*Proc. Ruakura Fmrs' Conf. Week, Hamilton*, 1955. pp. 101-115. Discussion: pp. 115-118. **2405**

In reply to criticisms of the slow progress of research on facial eczema, M. reported on investigations that have been carried out over the last 17 years. The affection is caused by an unidentified toxin in green grass, and it is associated with warm, rainy weather in the late summer and autumn. Symptoms are those of damage to the liver, photosensitivity and icterus. Precautionary measures consist of confining animals to a very small area, so that intake of grass is minimal, until colder weather has "hardened" the pasture. Most affected animals will eventually recover without treatment, but severely affected low-grade animals should be disposed of.—M.G.G.

ZONTINE, W. J., DELAY, P. D. & ENTWISTLE, V. P. (1955). **Toxicity in swine following the feeding of sack cleanings.**—*Calif. Vet.* **8**, No. 4, p. 26. **2406**

Nervous symptoms were observed in 15 pigs fed "sack cleanings", which consisted of the residues of meals shaken out of sacks returned to the feed manufacturers. The "cleanings" were found to contain 0.16% nitrophenide and 0.134% 3-nitro-4-hydroxyphenylarsonic acid.—R.M.

BEIJERS, J. A. (1956). **Vergiftigen bij ons vee door plantenziektebestrijdingsmiddelen, middelen tegen schadelijke insecten en andere dieren en onkruidverdelgers. [Poisoning of farm animals with substances used for the control of plant diseases, weeds, insects and rodents.]**—*Tijdschr. Diergeneesk.* **81**, 1-14.

[In Dutch, English, French and German summaries. Abst. from English summary.] **2407**

A discussion of cases of poisoning in farm animals following the use of substances

See also absts. **2408-2409** (toxicity of penicillin for g. pigs and hamsters); **2469** (book, drawbacks of antibiotics).

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease)

FISCHER, G. W. (1955). Beitrag zur Ursache des Penicillin-Todes bei Meerschweinchen.

[Nature of the lethal action of penicillin in guinea pigs.] — *Zbl. Bakt. I. (Orig.)* **164**, 230-233. **2408**

F. suggested that death resulting from the administration of penicillin to g. pigs was due to enteritis caused by the multiplication of *Bact. coli*. Simultaneous administration of streptomycin by mouth prevented death.

—R.M.

SCHNEIERSON, S. S. & PERLMAN, E. (1956).

Toxicity of penicillin for the Syrian hamster.

—*Proc. Soc. exp. Biol., N.Y.* **91**, 229-230.

[Authors' summary modified.] **2409**

A single s/c or i/p injection of the potassium salt of benzylpenicillin was toxic for hamsters in proportion to the amount administered. Toxicity was of the delayed type, the vast majority of deaths occurring on the 3rd, 4th and 5th days after injection. This parallels the reported experience with g. pigs and is in contrast to that with Swiss mice which tolerate very large doses. In the light of these findings, re-evaluation is indicated of experimental data concerned with hamsters either treated with or injected with material sterilized with penicillin.

MEHRING, A. L., JR., TITUS, H. W. &

BRUMBAUGH, J. H. (1955). Effects of two sulfonamides on the formation of egg shells.

—*Poult. Sci.* **34**, 1385-1389. [Authors' summary modified.] **2410**

Two unsubstituted sulphonamides, diamox (2-acetylamino-1, 3, 4-thiadiazole-5-sulphonamide) and benzenesulphonamide, were fed in capsules to pullets. The doses were 50 and 100 mg. of diamox and 35 mg. of benzenesulphonamide, daily. Both compounds immediately caused pullets to lay eggs with very thin shells or with no shells at all. Some pullets ceased laying. After treatment was stopped, the effects lasted only a few days, and the birds again laid eggs with normal shells.

employed for the control of plant diseases, weeds, insects and vermin. The poisonous substances dealt with include copper, lead, arsenic, nicotine, fluorine, thallium, zinc phosphide, D.D.T., aldrin and dieldrin.—T.E.G.R.

ANDREWS, E. D. & WHITTEN, L. K. (1956).

The effect of phenothiazine on thyroid glands of sheep.—*N. Z. J. Sci. Tech. Sect. A.* **37**, 414-418. [Authors' summary modified.] **2411**

Thyroid glands from sheep given a total of 120 g. of a commercial preparation of the drug in 6 doses over a period of 13 weeks, were compared with those from control animals. The mean wet weight of glands from phenothiazine-dosed sheep was slightly, though not significantly, less than that of controls, and the mean percentage iodine content was nearly twice as high as that of controls. It was concluded that phenothiazine does not exert a goitrogenic effect on the thyroid glands of sheep.

SENECA, H. & BERGENDAHL, E. (1956). Effect

of oxysteroids on the inhibitory action of antibiotics on cultures of bacteria and *Endamoeba histolytica*.—*Antibiotic. & Chemother.* **6**, 41-50. [Spanish summary pp. 77-78. [Authors' English summary and conclusion modified.] **2412**

Oxysteroids, desoxycorticosterone acetate, cortisone, hydrocortisone and compound S (11-desoxy-17-hydroxycorticosterone) had no inhibitory effect on bacteria and *E. histolytica*. Compound S interfered with the inhibitory action of antibiotics on bacteria. Oxysteroids significantly depressed the inhibitory effect of penicillin, streptomycin, and penicillin plus streptomycin, and mildly depressed the inhibitory effect of polymyxin on bacteria. They did not interfere with the inhibitory action of the tetracycline group, neomycin, and carbomycin, and did not significantly depress the inhibitory effect of penicillin plus oxytetracycline on bacteria; nor did they depress the inhibitory effect of oxytetracycline on *E. histolytica*.

TALSMA, D. (1956). Overgevoeligheid bij het rund en A.C.T.H. [Use of A.C.T.H. in cattle.]—*Tijdschr. Diergeneesk.* **81**, 208-211.

[In Dutch, English, French and German summaries.] **2413**

Injection of adrenocorticotrophic hormone, 40–80 i.u., yielded good results in some 50 cases in cows with skin lesions of photo-

sensitization, when administered early. It was also of value in a cow with oedema of the glottis, two with urticaria, one with acute laminitis; and 20 i.u.—supported by antibiotic therapy—in some 20 calves with arthritis.

—F. R. PAULSEN.

See also *absts.* **2154** & **2177** (mastitis); **2156-2157** (anthrax disinfection); **2169** (antituberculous factor in milk); **2171** (resistance of tubercle bacilli to disinfectants); **2176** (Johne's disease); **2189** (pasteurellosis); **2193** (pullorum disease); **2212** (antileptospiral effect of milk); **2213-2214** (effect of antibiotics on *L. canicola*); **2242** (furacillin and antrycide); **2244** (coccidiosis); **2245** (nicarbazin); **2246-2247** ("hemosporidin"); **2248** (berenil); **2249** & **2277** (mepacrine); **2289** (pancreatic dornase in bovine rhinotracheitis); **2335** (fly control); **2336** (mange); **2337** (s.c. inj. of carbon tetrachloride in liver fluke control); **2343**, **2344** & **2347-2350** (anthelmintics); **2362** (antibiotic food supplements); **2366** (effect of phenothiazine on cobalt-deficient lambs); **2462** (disinfection of pig sties); **2469** (book, drawbacks of antibiotics).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

MORENG, R. E. & BRYANT, R. L. (1955). **The tolerance of the chicken embryo to periods of low temperature exposure.**—*Poult. Sci.* **34**, 1342-1348. [Authors' summary modified.] **2414**

Ice crystal formation appeared to be the major factor in embryonic mortality when eggs were exposed to a temp. of -10°F . for up to 125 min. When an internal egg temp. of approx. 32°F . was maintained, a limited number of embryos were able to withstand exposures of up to 76 hours after one day of incubation. The poikilothermic nature of the early embryo is apparently responsible for its tolerance to exposure to low temp. Cooling rate exerted a marked influence on ability to withstand exposure. The slower rate of cooling was the less damaging of the two rates employed.

MABON, R. M. (1956). **A simple method of assessing the moisture exuded through the skin of cattle.**—*Nature, Lond.* **177**, 284-285. **2415**

By fitting an adapted square polished metal box, 4 in. \times 4 in. \times 2½ in., open at one end, over an Assman psychrometer, minor fluctuations in moisture exuded from the skin of Tanganyika zebu bulls could be demonstrated under relatively dry conditions. The relationship between the atmospheric humidity and the humidity of the air passing close to the skin is expressed as the ratio of the animal to atmospheric dew points.—A. ACKROYD.

TANEJA, G. C. (1956). **Adrenergic sweating in cattle.**—*Nature, Lond.* **177**, 482. **2416**

The effects of dibenamine (N-(2-chloroethyl) dibenzylamine hydrochloride), adrenaline, and noradrenaline on the sweating rate, rectal temp. and pulse-rate of a calf were studied. The conclusion was drawn that the

sweat glands in cattle are adrenergic, in contrast with those of man which are both adrenergic and cholinergic.—T.E.G.R.

COATS, D. A., DENTON, D. A., GODING, J. R. & WRIGHT, R. D. (1956). **Secretion by the parotid gland of the sheep.**—*J. Physiol.* **131**, 13-31. **2417**

Secretion was unaffected by section of the cervical sympathetic trunk. Secretion was increased by stimulation of the central end of the vagus and by asphyxiation, and decreased by section of the fifth cranial nerve; but there was basal secretion even after cranial and sympathetic neurotomy.—F. R. PAULSEN.

UBATUBA, F. (1954). **Excreção urinária de 17-cetoesteroides neutros no cavalo normal e no cavalo castrado. [Urinary 17-ketosteroids in stallions and geldings.]**—*Mem. Inst. Osw. Cruz.* **52**, 377-395. [Abst. from English summary.] **2418**

The level of urinary 17-ketosteroids was lower in geldings than in stallions. The part played by the horse's testicle in the metabolism of the neutral urinary steroids is discussed and it is considered that a more accurate study of the fractionation of the neutral 17-ketosteroids is necessary in the case of the horse in view of the low androgenic activity of the urine.

—T.E.G.R.

I. KITTS, W. D., BAILEY, C. B. & WOOD, A. J. (1956). **The development of the digestive enzyme system of the pig during its pre-weaning phase of growth. A. Pancreatic amylase and lipase.**—*Canad. J. agric. Sci.* **36**, 45-50. **2419**

II. BAILEY, C. B., KITTS, W. D. & WOOD, A. J. (1956). **The development of the digestive enzyme system of the pig during its pre-weaning phase of growth. B. Intestinal lactase,**

sucrase and maltase.—*Ibid.* 51-58. [Authors' absts. modified.] **2420**

I. The amylolytic activity of crude aqueous extracts of the pancreatic glands of unweaned pigs increases markedly with advancing age. The lipolytic activity is high at birth and remains high as growth proceeds.

II. Intestinal lactase, sucrase and maltase activity were measured using the excised small intestines of piglets at various ages from birth to weaning. Lactase activity was high up to the second week of life, when a precipitous decline was noted which reached minimal levels after 3-4 weeks. Sucrase and maltase activity increased from negligible levels at birth to a maximum after about 25 days. Such changes must markedly affect the suitability of different carbohydrates as sources of energy.

I. SMITH, A. H., KLEIBER, M., BLACK, A. L. & LUICK, J. R. (1955). **Transfer of phosphate in the digestive tract. I. Swine.**—*J. Nutr.* **57**, 497-506. [Authors' summary modified.] **2421**

II. SMITH, A. H., KLEIBER, M., BLACK, A. L. & LOFGREEN, G. P. (1956). **Transfer of phosphate in the digestive tract. III. Dairy cattle.**—*Ibid.* **58**, 95-111. [Authors' summary and conclusions modified.] **2422**

I. The distribution in pigs of i/v injected radiophosphate at various times after its administration indicates a very large and rapid transfer of plasma inorganic phosphorus to the gastro-intestinal contents and tissues. Most of it appears to enter the contents of the small intestine, which, 6 hours after injection in the 8-month-old pig, has a specific activity greater than most tissues and organs, being exceeded only by the liver and kidney. A decreasing specific activity of the contents toward the posterior portion of the digestive tract indicates that the endogenous P is resorbed from the lower intestinal contents to a much greater extent than the food P. Aging markedly decreases the secretion of endogenous P. (as compared with the circulating inorganic P) and also decreases the rate of uptake of circulating inorganic P by the gastro-intestinal tissues.

II. The appearance of i/v injected radiophosphate in the contents of the gastro-intestinal tract of cows and calves indicated a high secretion of endogenous phosphorus. In the mature cow, as in the mature sheep, the main site of secretion is the rumen, although most of the phosphorus in the bovine rumen

seems to enter in the saliva. In calves, however, the ruminal secretion is lower and much of the endogenous phosphorus appears to be secreted into the small intestine, though not as much in pigs. The rate of equilibration of tissue phosphorus with circulating inorganic phosphorus was calculated for some organs. A slight aging effect on tissue phosphorus metabolism was observed with a lower rate of uptake in older animals. The phosphorus exchange of intestinal tissues was generally less in cows than in sheep.

Four calves of widely varying body size which had fasted for 1-16 hours were killed 24 hours after injection of radiophosphate. Analysis of variance revealed no significant difference in chemical composition between corresponding tissues of the animals; however, significant differences in phosphorus secretion rates were observed.

ANDERSON, C. M. (1956). **The metabolism of sulphur in the rumen of the sheep.**—*N. Z. J. Sci. Tech. Sect. A.* **37**, 379-394. [Author's summary modified.] **2423**

The fate of sulphate, sulphide and protein-sulphur was studied *in vitro* in washed suspensions of ruminal microflora, and *in vivo* in the rumen of a sheep. The catabolism of sulphate, protein-sulphur and "free-amino-acid sulphur" to sulphide by the ruminal microflora, the consequent utilization of this by the sheep and the anabolism of sulphide to microbial protein are discussed and shown to depend on conditions in the rumen.—M.G.G.

BILEK, J. & JANOVSKY, M. (1956). **A radiographic method for the study of the function of the cow's udder.**—*Nature, Lond.* **177**, 582-583. **2424**

The milk ejection mechanism in the cow was studied radiographically. Contrast medium (aq. soln. of iodine) was injected into the teat after an equal vol. of milk had been withdrawn by catheter. Mechanical stimulation of the teat (by squeezing as in milking) was followed within a few sec. by a series of contractions which forced the contrast fluid to the roof of the cistern and eventually into the larger milk ducts. Stimulation of a teat on the opposite side of the udder produced similar contractions after a longer interval. It is considered that these contractions are not associated with the milk ejection evoked by administration of oxytocin.—T.E.G.R.

GROSVENOR, C. E. (1956). **Effect of ergotamine on milk-ejection in lactating rat.**—*Proc. Soc.*

exp. Biol., N.Y. **91**, 294-296. [Author's summary modified.] **2425**

The quantity of milk secured in 20 min. by the litters of ergotamine-treated rats on the first day of treatment was small in comparison with that obtained by control offspring. The difference was significant. This difference progressively diminished, however, following additional treatment on the following 3 days, as the animals became more resistant to the drug. Nevertheless, the average amount of milk obtained by experimental animals over the 4-day period of treatment was significantly less than that obtained by control offspring. The possible mechanism by which ergotamine interferes with "let-down" of milk in the rat is discussed.

I. TOLLE, A. & URBASCHEK, B. (1956). Nachweis und Häufigkeit der Blutgruppenfaktoren bei Rindern verschiedener Rassen. [**Demonstration and frequency of blood group factors in cattle of different breeds.**] — *Dtsch. tierärztl. Wschr.* **63**, 45-49. **2426**

II. TOLLE, A. & URBASCHEK, B. (1956). Die Vererbung der mit Normalantisera nachweisbaren Blutgruppenfaktoren des Rindes. [**Inheritance in cattle of blood group factors demonstrable with normal antisera.**] — *Ibid.* **74-76**. **2427**

I. The authors studied the frequency of occurrence of blood groups A, B, C and E (as described by Schermer & Otte [*V.B.* **23**, 2500]) in 2,000 cattle of the Spotted Mountain, Franconian, Black Pied, Harz and Allgäu breeds. The distribution of the factors was almost identical in the first 2 breeds, but differed widely in the others. A combination of all four factors occurred in 21% of Harz cattle and in only 4-12% of the other breeds. The factors could not be detected in about 10% of the cattle examined.

II. The blood factors A, B, C and E in the same breeds of cattle were inherited by dominant genes. There were no allelomorphs for these factors. The factors A and E appeared to be linked. It was possible to exclude paternity when the blood of the calf contained one or more factors absent from the blood of the dam or of the suspected bull.

—R.M.

KETZ, H.-A., VOGEL, G. & WESTPHAL, W. (1956). Vergleichende Untersuchungen über die Steuerung des weissen Blutbildes in Abhängigkeit von der Alkalireserve des Blutes. II. Mitteilung: Der Einfluss exper-

imenteller Acidose und Alkalose auf das weisse Blutbild von Pferd, Schwein, Rind, Schaf und Ziege. [**Changes in the leucocyte picture related to the alkali reserve of the blood. II. Influence of experimental acidosis and alkalosis on the leucocyte picture in horses, pigs, cattle, sheep and goats.**] — *Zbl. VetMed.* **3**, 149-157. [English, French and Spanish summaries.] **2428**

NH₄Cl acidosis induces in the pig, ox, sheep, and goat, an increase in the number of leucocytes, lymphopenia, and neutrophilia, while in the horse it causes leucopenia involving the neutrophiles, and in the pig, neutrophilia and lymphocytosis. NaHCO₃ alkalosis causes an increase in the number of leucocytes and neutrophilia in the horse and sheep, a decrease in leucocytes in the pig and goat, with neutrophilia in the goat and neutropenia in the pig. Dietary acidosis has different results.—F. R. PAULSEN.

DICK, D. A. T. (1956). **Nuclear and cytoplasmic volumes in the hepatic cells of the foetal sheep.**—*Nature, Lond.* **177**, 236-237. **2429**

The mean volume of the cytoplasm and the nucleus of liver cells increased rapidly until the embryos reached a size of 29 mm. Thereafter, until birth, the nuclear vol. decreased slightly and the cytoplasmic vol. increased. The decrease of the growth rate of the cells at the 29-mm. stage coincided with the initial appearance of glycogen within the cell.—R.M.

MEGALE, F., FINCHER, M. G. & MCENTEE, K. (1956). **Peritoneoscopy in the cow: visualization of the ovaries, oviducts, and uterine horns.**—*Cornell Vet.* **46**, 109-121. **2430**

Some detail is given of the equipment. The cervical approach was attempted 14 times on 10 cows, but the ovaries proved hard to find. The approach through the right or the left flank under local infiltration was carried out 27 times on 19 cows. Frequently both ovaries could be examined through a single puncture. The right flank proved the preferable site. A surgical technique was evolved for semi-permanent installation of a cannula, and was carried out on 6 cows. It was found that repeated observations on the ovaries were practicable, but only in animals thinner than the average. [This technique should not displace the examination *per rectum* by an experienced operator, who would wish to use it only on the odd problem case. Its possibilities in physiological research are undeniable.]—F. L. M. DAWSON.

ADAMSONS, K., JR., ENGEL, S. L., VAN DYKE, H. B., SCHMIDT-NIELSEN, B. & SCHMIDT-NIELSEN, K. (1956). **The distribution of oxytocin and vasopressin (antidiuretic hormone) in the neurohypophysis of the camel.**—*Endocrinology*. **58**, 272-278. [Authors' summary modified.] **2431**

The total amount of antidiuretic hormone (vasopressin) in the neurohypophysis of the camel is similar to that found in cattle. Only stored antidiuretic hormone could be investigated and no evidence suggesting a special role of the hormone in water conservation in the camel can be offered. Peculiarities in the distribution of oxytocin were noteworthy.

See also absts. 2470 (book, veterinary pathological histology); 2471 (book, comparative endocrinology).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

LOCHMANN, E.-H. (1955). Kann das Ergebnis der bakteriologischen Fleischuntersuchung durch zur Zeit des Todes im Organismus befindliches Penicillin beeinflusst werden? [Influence of penicillin content of carcass on bacteriological meat inspection.] — *Arch. Lebensmittelhyg.* **6**, 251-253. **2433**

L. recommended that meat inspectors should have full details of pre-slaughter penicillin therapy.—M.G.G.

JELLARD, C. H. (1956). **An outbreak of *Salmonella typhi-murium* food poisoning, probably due to infected hen eggs.** — *Mon. Bull. Minist. Hlth Lab. Serv.* **15**, 34-38. [Author's summary modified.] **2434**

An account of an outbreak of *S. typhi-murium* food poisoning following the consumption of a partly-cooked custard pudding. The probable source of infection was hens' eggs, contaminated in the packing case. Judging from the high attack rate (98%), it is probable that the organism multiplied abundantly during the slow cooling of the pudding overnight.

See also absts. 2291 (orf); 2325 (carriers of virus diseases); 2341 (trichinosis); 2377 (avian diseases transmissible to man).

REPRODUCTION AND REPRODUCTIVE DISORDERS

WILLETT, E. L., OHMS, J. I. & TORRIE, J. H. (1955). **Factors influencing experimental error in field trials in artificial insemination.** — *J. Dairy Sci.* **38**, 1375-1384. **2436**

Error variance decreased rapidly as the numbers of services in a trial rose to 80, and very little thereafter. Bulls infected with *Vibrio fetus* seemed to show more variation

The relative concentration was remarkably high in the paraventricular nuclei with a vasopressin/oxytocin (V/O) ratio of 0.26. On the other hand, an unusually small amount was found in the posterior lobe (40,000 milli-units) with a V/O ratio of 4.3 as compared with 1.4 in cattle.

BUTLER, J. A. V. (1956). **The action of ionising radiations on biological materials. Facts and theories.**—*Radiation Res.* **4**, 20-32. **2432**

The action of ionizing radiation on the chromosome appears to derive from its disturbance of the bonds linking histone with desoxyribosenucleic acid.—R.M.

KRALJ, M., MIKLAUŠIĆ, B., RIŽNAR, S. & ANDRAŠIĆ, N. (1956). **Druga godina rada ambulantne službe Veterinarskog Fakulteta Sveučilišta u Zagrebu (1-X-1954.—1-X-1955).** [Report of the outpatients' department of the Zagreb Veterinary Faculty during 1954-55.] — *Vet. Glasn.* **10**, 42-54. [In Croat. German summary.] **2435**

The out-patients department of the Zagreb veterinary faculty has a teaching staff of two surgeons, two obstetricians, two internal diseases specialists and two experts on epizootic diseases. Practical instruction and demonstrations for older students are held daily on farms in the vicinity. Two post-graduate courses were held during the summer of 1955. Details are given of examination of 21,007 animals carried out during 1954-55, 1,054 of which were treated for parasites and 14,418 for infectious diseases. Surgical treatment was given to 2,096 and obstetrical treatment to 3,448 animals.—E.G.

than others from "collection" to "collection"—a term applied to a unit of 100-300 ejaculates. —F. L. M. DAWSON.

UNITED NATIONS. (1955). **Report of the meeting on international regulations on the import and export of cattle semen, held at Cambridge, England, 22-25 March, 1955.** — pp. 47.

Rome: Food and Agriculture Organization of the United Nations. Meeting Report 1955/6. **2437**

Results of the discussions held on technique are given in summary. Recommendations were agreed, *inter alia*, on requirements for control of infectious disease in the exporting country. There are appendices on the sero-agglutination brucellosis test, on infectious infertility; and, in considerable detail, on the progress made in artificial insemination throughout the European countries.—F. L. M. DAWSON.

ARMOUR, J. & SAINSBURY, R. W. (1956). **Artificial insemination in Nigeria using air transported bull semen.**—*Vet. Rec.* **68**, 140-141. [Authors' summary modified.] **2438**

Bull semen was collected in Buckinghamshire diluted 1:10, packed in thermos flasks and transported by air to Vom. Forty-five cows were inseminated from 40 samples of fresh semen received over a period of 3 months. In all 29 conceived (23 to the first insemination, 5 to the second and one to the third). Comparison was made with results obtained in S. Africa using air-transported deep-frozen semen [*V.B.* **25**, 523].

POLGE, C. (1956). **Artificial insemination in pigs.**—*Vet. Rec.* **68**, 62-76. **2439**

In boars the average semen density (100,000 spermatozoa/ml.) is too low for use of the impedance bridge. The total number of spermatozoa per ejaculate is from 5 to 10 times the average for bulls. Boar semen is low in fructose, but rich in ergothioneine and m-inositol. The large volume appears unnecessary to fertility. One boar gave 2 ejaculations twice weekly for a year, *i.e.*, 5×10^{10} spermatozoa a week. Semen can be stored for up to 3 days at 15° to 20°C. after which it needs 2 hours' re-warming and shaking. Even very slow cooling to any lower temp. kills all spermatozoa. Fractionated semen behaves quite differently, for motility of the spermatozoa-rich fraction lasts 10 days at 5°C.—much longer than undiluted and buffered bull semen. The most satisfactory diluents were 2% glycine, or 2% glucose, both with egg yolk: 70% of the spermatozoa were active after 6 days, only 30 min. instead of 2 hours' reactivation being necessary. In deep-freeze trials so far the best recovery rate had been 25%. The conception rate (C.R.) was only about 30% with semen stored more than 6 hours; after less than 6 hours' storage it was

normal. Dilution 1:9 did not impair the C.R. The use of antibiotics appeared to help the C.R. A boar should be able to inseminate about 30 sows weekly.—F. L. M. DAWSON.

JOHARI, M. P. (1956). **The gel mass in the semen of the boar.**—*Vet. Rec.* **68**, 158-163. [Author's summary modified.] **2440**

The gelatinous portion of the semen of the boar, besides acting mechanically in preventing the back flow of semen, has other functions in reproduction. It contains substances which give a characteristic response for oestrogens when injected into ovariectomized mice. It behaves quite differently from that of the rabbit and of man. It does not go into solution on incubation at 37°C. Its physiology was discussed.

SZUMOWSKI, P., MARKOVIC, B. & CANO, A. (1956). Le lait écrémé en poudre pour la dilution et la congélation du sperme de béliér. [Dried skim milk for diluting and freezing ram semen.]—*Rec. Méd. vét.* **132**, 124-134. **2441**

In the storage of ram semen, dried skim milk diluent was shown to be at least as good as diluents with citrate, citrate-phosphate, or glucose.—M.G.G.

CREUTZBERG, F. (1955). **A comparative study of equine pregnancy tests using the Galli-Mainini and the Aschheim-Zondek reactions.**—*Acta endocr., Copenhagen.* **19**, 386-396. [In English.] **2442**

From the examination of 208 blood samples from mares artificially inseminated, C. concluded that the Galli-Mainini test, using *Rana esculenta* was specific, rapid and simple. In the case of a negative reaction to this test, however, the sample should also be examined by the Aschheim-Zondek method.—R.M.

JOHNSTON, E. F., HUDSON, F., BOGART, R., OLIVER, A. W. & MCKENZIE, F. F. (1956). **The effects of injected testosterone on adult ewes.**—*J. Anim. Sci.* **15**, 177-184. [Authors' summary and conclusions modified.] **2443**

Testosterone injected *i/m* at the rate of 100 mg. weekly into adult ewes had the following effects:—typical masculine behaviour, significant enlargement of the clitoris and significant reduction in the size of the heart and thyroid glands. It did not increase rate of gain and did not alter carcass grading. The weight of the liver, kidneys, adrenals, pituitary gland and ovaries was not apparently affected. However, the appearance

and consistency of most of these organs were altered, indicating histological changes. A chick assay revealed no active residual testosterone in the meat of treated ewes slaughtered 4 days after the last injection of testosterone. In ewes treated for 8 weeks and slaughtered 17 days later the clitoris had regressed but was still above normal size.

PIGATO, E. & GUZZONATO, G. (1956). Il tasso ormonale nel latte di vacche gestanti. I. Alcune osservazioni sul contenuto degli androgeni e dei metaboliti del progesterone con il progredire della gestazione. [The hormone content of the milk of pregnant cows. I. Androgens and progesterone metabolites.]—*Progr. vet., Torino*, **11**, 60, 62-64 & 66. 2444

The chemical process is described in detail, first for the isolation of the mixed 17-, and 20- (progesterone metabolite) groups of steroids. The 17- ketosteroids were then separated by the use of Girard's reaction; viz. the formation by the 17- compounds but not the 20- compounds, of condensation products with trimethylammonioacetylhydrazine. Androgenic activity was checked by bioassay. 150 samples of milk from 5 cows similarly maintained were analysed. The mean excretion of 17- ketosteroids fell from 44.7 mg.% at the third month of pregnancy to 3.58 at the 7th month, whereas that of 20- ketosteroids rose from 4 to 9.6 mg.%.

—F. L. M. DAWSON.

I. O'MARY, C. C. & CULLISON, A. E. (1956). Effects of low level implantation of stilbestrol in steers on pasture.—*J. Anim. Sci.* **15**, 48-51. 2445

II. O'MARY, C. C., WARREN, E. P., DAVIS, T. J. & PIERCE, H. H., JR. (1956). Effects of low level implantations of stilbestrol in steers fattened on dry lot rations.—*Ibid.* **52**, 58. 2446

I. Two groups of 11 and 8 steers were implanted with 24 mg. of stilboestrol. Over a 10-week period the av. daily wt. gains were 1.83 and 3.02 lb. respectively as compared with 1.25 and 2.33 for controls.

II. Twenty-five steers in fattening pens were each implanted with 36 mg. of stilboestrol. Six weeks later, 10 received an additional 36 mg. Over a 15-week period, the av. daily wt. gains in both groups were 1.74 lb. as against 1.34 for controls. In a second experiment, 15 steers received 36 mg. of stilboestrol and 10 received 12 mg. initially and 24 mg. 8 weeks later. Over a 20-week period the av.

daily wt. gains were 2.03 lb. for steers in the first group, 1.85 for the second and 1.64 for controls.—M.G.G.

PRESTON, R., CHENG, E., STORY, C. D., HOMEYER, P., PAULS, J. & BURROUGHS, W. (1956). The influence of oral administration of diethylstilbestrol upon estrogenic residues in the tissues of beef cattle.—*J. Anim. Sci.* **15**, 3-12. 2447

Assay methods using the weight of the uterus of experimental mice did not reveal oestrogenic residues in the tissues of cattle which had been fed diethylstilboestrol.

—M.G.G.

HERRICK, R. B. & ADAMS, J. L. (1955). Effect of exogenous gonadal hormones on Single Comb White Leghorn pullets.—*Poult. Sci.* **34**, 1362-1367. [Authors' summary modified.] 2448

Four groups each of 15 pullets were injected twice weekly with varying dosages of synthetic gonadal hormones as follows:—Control—propylene glycol (no hormone), diethylstilboestrol 4-16 mg./week, testosterone propionate 5-20 mg./week, progesterone 10-40 mg./week. Egg production was severely depressed by all hormones used. Egg weight, yolk weight, albumen quality, blood spots, hatchability and shell thickness were not significantly affected. Meat spots were significantly reduced by all hormone treatments. Progesterone depressed fertility significantly and caused severe moulting; pullets in this group recovered promptly after cessation of treatment. Next in order of recovery was the group given testosterone, followed by the diethylstilboestrol treated pullets.

KNUDSEN, O. (1956). Chromosomen—Untersuchungen beim Bullen. [Examination of chromosomes in infertile bulls.—*Fortpflanzung*, **6**, 5-8. [English summary.] 2449

Acquired disturbances in spermiogenesis (50 cases) showed, consistently, degeneration confined to the centrosome and spindle, producing specific abnormal cells in the ejaculate. Congenital disturbances showed adhesion of chromosomes, preventing cell division, with resultant pycnosis. Another type of testicular hypoplasia involved multiple spindles, and hence giant cells in the ejaculate. Five cases were seen of structural change in chromosomes—inversion and translocation.

—F. L. M. DAWSON.

MUNRO, I. B. (1956). **Constriction of the cervix at oestrus in cattle and its response to dienoestral.**—*Vet. Rec.* **68**, 131-132. [Author's summary modified.] **2450**

Sixteen cases of cervical constriction are recorded, representing an incidence of 0.1% of 16,238 inseminations. The association of this condition with an oestrogen deficiency during oestrus is discussed. Dienoestrol was injected s/c in 15 cases with subsequent dilatation in 11, five of which became pregnant to inseminations carried out at the time of treatment, and three others to subsequent inseminations.

YAMAUCHI, M. (1955). [Studies on the ovarian cyst in the cow. IV. The course of recovery from ovarian follicle cyst by the chorionic gonadotrophin therapy.]—*Jap. J. vet. Sci.* **17**, 47-56. [In Japanese. Abst. from English summary.] **2451**

Six cows with cystic ovarian disease [does not state how long the disease had existed] were each treated with 10,000 mouse units of chorionic gonadotrophin, the results being checked by rectal palpation and by the estimation of urinary oestrogen and pregnandiol. Three were slaughtered for histological study and assay of gonadotrophic potency. Two of the other three became pregnant. The course of resolution of the ovaries was elucidated in some detail.

—F. L. M. DAWSON.

WILTBank, J. N. & CASIDA, L. E. (1956). **Alteration of ovarian activity by hysterectomy.**—*J. Anim. Sci.* **15**, 134-140. [Authors' summary modified.] **2452**

Complete removal of the uterus in ewes and cows caused maintenance of the corpus luteum in most animals. The corpus luteum was maintained for as long as 100 days in ewes and 154 days in cows. Longer periods were not attempted. Removal of approx. half of the uterus in the ewe did not delay the return to oestrus. Nearly complete removal of the uterus in the cow delayed the return to oestrus. It was postulated that the corpus luteum, although maintained as an anatomical structure, may not function at the same level as in intact animals.

WOODWARD, R. R. & QUESENBERRY, J. R. (1956). **A study of vaginal and uterine prolapse in Hereford cattle.**—*J. Anim. Sci.* **15**, 119-124. **2453**

During the period 1935-54, 93 cases of

parison of pedigrees indicated a hereditary susceptibility. A lower incidence at a neighbouring centre suggested a predisposing nutritional factor.—M.G.G.

JUHLER, H. (1956). **Kejsersnit hos hoppen. [Caesarian section in the mare.]**—*Nord. VetMed.* **8**, 165-178. [In Danish. English and German summaries. Abst. from English summary.] **2454**

An account of a number of caesarian sections previously carried out in mares, with a brief mention of the techniques employed and of one performed by the author in a case of anterior transverse position with dislocation of the head. The technique and the post-operative treatment were described in detail. The mare completely recovered in spite of several serious complications.

BUTZ, H. & SCHMAHLSTIEG, R. (1955). **Erblicher Milchmangel als Folge einer Hypoplasie des Drüsenparenchyms im Euter mit formal- und kausalgenetischer Analyse. [Hereditary lack of milk as the result of hypoplasia of the glandular parenchyma of the udder.]**—*Dtsch. tierärztl. Wschr.* **62**, 463-468. **2455**

An account of the inheritance of hypoplasia of the udder in a herd of Black Pied cattle.—R.M.

SCHUMANN, H. (1955). **Die Letalfaktoren bei Hund und Katze. [Lethal factors in dogs and cats.]**—*Berl. Münch. tierärztl. Wschr.* **68**, 376-378. [English summary.] **2456**

The known lethal factors in dogs and cats are briefly described. In dogs they are split palate, hairlessness, whiteness with abnormalities of sight and hearing, paralysis, taillessness, haemophilia, and defects of the skull; and in cats albinism, and squint.

—M.G.G.

JAMES, F. (1956). **Sexing foetuses by examination of amniotic fluid.**—*Lancet.* **270**, 202-203. **2457**

In the case of a female foetus most of the cells in the sediment of amniotic fluid are basophilic with the Papanicolau staining technique and have large vesicular nuclei. Sex chromatin can be determined in these cells. In the case of a male foetus most of the nuclei cells are pycnotic but some basophilic cells have vesicular nuclei which, however, contain no sex chromatin. Where the sex of a new-born cannot be established prolapse occurred out of 7,859 births. Com-

immediately after birth the method described by Moore & Barr (with smears of oral mucosa) [*V.B.* 26, 627] is recommended.

—T.E.G.R.

FUCHS, F. & RIIS, P. (1956). **Antenatal sex determination.** — *Nature, Lond.* 177, 330. 2458

Smears were prepared by centrifugation

See also absts. 2194-2199 (brucellosis); 2217-2221 (vibriosis); 2231 (*Aspergillus fumigatus* and *Rhizopus equinus* from aborted bovine foetuses); 2276 (experimental stillbirth in swine); 2280-2281 (equine virus abortion); 2351 (uterine adenocarcinoma in cows); 2371 (riboflavin deficiency of dam causing congenital malformations in young rats); 2372 (effect of vitamin B₁₂ and soyabean protein diet in rats); 2374-2375 (ovine pregnancy toxæmia).

ZOOTECHNY

SCHUMANN, H. (1956). Hornlosigkeit, ihre Vererbung und ihre Folgen in der Schafzucht. [**Hornlessness, its inheritance and effects in sheep breeding.**]—*Fortpflanzung*. 6, 31-33. [English summary.] 2459

A review of the literature on the inheritance of hornlessness in sheep and its connexion with cryptorchidism.—M.G.G.

INKSTER, I. J. (1955). **Face cover and productivity in sheep.**—*N. Z. J. Agric.* 91, 605 & 607-608. 2460

Over thousands recorded, "open-faced" Romney ewes produced 10% more lambs, than those with woolly faces, and the weaning weights of lambs were also significantly higher. —F. L. M. DAWSON.

HAELTERMAN, E. O. (1956). **Practical isolation equipment for baby pigs.**—*Amer. J. vet. Res.* 17, 129-131. [Author's summary modified.] 2461

Inexpensive animal isolation equipment is described, which has been used successfully in the study of transmissible gastro-enteritis in pigs, and in rearing pigs deprived of colostrum. The units afford good visibility of test animals, and are a convenient means of feeding with minimal danger of cross infection. They are easily cleaned and sterilized.

See also abst. 2472 (book, care of the hooves in cattle).

TECHNIQUE AND APPARATUS

POWELL, E. O. (1956). **A rapid method for determining the proportion of viable bacteria in a culture.**—*J. gen. Microbiol.* 14, 152-159. [Author's summary modified.] 2464

A method of making graticules (grids) on the surface of cellophane is described. A sample is inoculated on to such a graticule,

of amniotic fluid from 20 pregnant women and stained with cresyl violet. Amniotic fluid was obtained by rupture of the membranes for induction of labour or by trans-abdominal puncture. By examining the cells, the authors correctly determined the foetal sex in all cases. They consider that this method may become of great significance in veterinary practice.—M.G.G.

SCHILLER, H. -J. & DEDIÉ, K. (1955). Erfolge und Grenzen einer Grossentseuchung mit Chlorgas. [**Disinfection of pigsties and poultry houses with chlorine.**]—*Mh. VetMed.* 10, 633-634. 2462

The interior is scraped and cleaned; the house is then air-sealed. Into earthenware bowls placed on the floor is poured hydrochloric acid followed by potassium permanganate at the rates of 4 litres of acid and 600 g. of permanganate/1,000 cu. m. After 48 hours the house is opened and ventilated. Animals may be introduced after a few hours. *E. rhusiopathiae* and non-pathogenic mycobacteria were killed by this procedure but salmonellae were not. The virus of Newcastle disease was only killed by twice the conc. of chlorine.—M.G.G.

MCCLARY, C. F. (1955). **The restriction of ooporphyrin deposition on egg shells by drug feeding.**—*Poult. Sci.* 34, 1164-1165. 2463

The colour of hens' eggs changed from brown, through various shades, to white when 0.0125% of nicarbazin (a coccidiostatic drug having the formula: 4, 4'-dinitrocarbanilide, 2 hydroxy-4,6-dimethylpyrimidine) was added to the diet.—T.E.G.R.

and the organisms are counted before and after a short period of growth.

ANON. (1955). **Iodometer dip tester. (For testing arsenical dips.)**—*Fmg S. Afr.* 30, 518-523. 2465

An apparatus consisting of 3 celluloid tubes is described for determining the sodium arsenite and arsenate content of a dip. Three

kinds of tablets are used: to clean the sample, to convert sodium arsenate to arsenite, and to neutralize the acid from the first tablets. The

testing fluid is iodine soln., which is added to the sample until an irreversible colour change occurs.—M.G.G.

See also absts. 2163 (Phase-contrast microscopy of tubercle bacilli); 2173 (cultivation of acid-fast bacilli); 2192 (synthetic medium for *S. pullorum*); 22.0 (typing of brucella); 2201-2202 (electron microscopy of leptospira); 2236 (phase-contrast microscopy of PPLO); 2259-2260 (F. & M. d.sease tissue-culture); 2281 (propagation of equine abortion virus in hamsters); 2282 (tissue culture of rinderpest virus); 2292 (inhibition of Rift Valley fever virus by u.v. light); 2309 (propagation of fowl plague and Newcastle disease virus in embryonic human lung); 2328 (two methods for virus and rickettsial c.-f. tests).

REPORT

NETHERLANDS. (1955). De gezondheidstoestand van de veestapel in 1951, 1952 en 1953. Samengesteld door de Directeur van de Veeartsenijkundige Dienst. [**Livestock health during 1951, 1952 and 1953. Report of the Director of the Netherlands Veterinary Service.**] [VAN DEN BORN, J. M.] pp. 111. Netherlands State Printing and Publishing Organization. 2466

This report is recommencing publication after a lapse of nearly 20 years. It provides a commentary on the work of the Netherlands

veterinary service, and contains statistics showing the livestock population and the incidence of the major diseases.

There are details of the 5-year plan for the eradication of bovine TB., which commenced on the 20th May 1951. In the year 1950-51, 385,000 reactors were registered; 130,000 of these had been slaughtered by the end of 1952. By 1953 all except the western provinces were free or practically free from bovine TB., and out of 79,000 infected herds in 1951, 58,000 were free from TB. in 1953.

—R.M.

BOOK REVIEWS

SEELIGER, H. (1955). Listeriose. [**Listeriosis.**] pp. 152. Leipzig: Barth - Verlag. DM 11.60. 2467

This paper-covered monograph is the eighth in a series under the general title "Beiträge zur Hygiene und Epidemiologie". The author is Director of the German Salmonella Centre and works in the Institute of Hygiene in Bonn. A feature of this monograph is a comprehensive and critical review of the literature: there some 350 references, including some to articles still in press when the manuscript was sent to the publisher. The text is divided into four sections—the causal agent, listeriosis in animals (wild, laboratory and farm animals), listeriosis in man, and bacteriological and serological methods of diagnosis. The epidemiology of the disease is discussed and the importance of human infection from animals and animal products is stressed. Mortality in infected new-born children and in old people with meningitis is 70%: other forms of the disease in man are relatively benign, and symptomless infections occur. The difficulties of diagnosis are discussed. Complement fixation may help in diagnosis, but isolation of

the causal organism is the only certain method of diagnosis.—E. G. WHITE.

MCGRATH, J. T. [Associate Professor of Pathology, University of Pennsylvania Veterinary School]. (1956). **Neurologic examination of the dog. With clinicopathologic observations.** pp. 181, London: Henry Kimpton. 37s. 6d. 2468

This is an important book. There has long been a need for a book on the neurological examination of the dog, and the present work fulfils to a large extent such requirements. It is obvious that much careful work has been done by the author, and there is no doubt that the book will be of value, not only to the veterinary surgeon, but also to the research worker who utilizes the dog as an experimental animal.

The text is divided into two sections, dealing with anatomy and neuro-physiology and with clinico-pathological studies. It is well illustrated with original photographs and drawings. It has a list of 84 references and a subject index. Paper, print and binding are of very good quality.

This is a book which can be confidently recommended.—N. M. LARIN.

ZINZIUS, J. (1954). *Die Antibiotika und ihre Schattenseiten. [Drawbacks of antibiotics.]* pp. 96. Stuttgart: Hippokrates-Verlag. DM 6.80. **2469**

The purpose of this little monograph is to acquaint the medical practitioner with the undesirable side-effects and complications which may accompany the use of penicillin, streptomycin, aureomycin (chlortetracycline) terramycin (oxytetracycline) and chloramphenicol. Each of the five mentioned antibiotics is dealt with in a separate chapter. A useful feature is the bibliographical list at the end of the booklet, comprising about twelve pages of references.—E.G.

PALLASKE, G. [Direktor des Vet. Pathologischen Institutes der Karl Marx Universität Leipzig]. (1955). *Pathologische Histologie. Leitfaden der Histopathologie für Studierende der Vet. Medizin und Tierärzte. [Pathological histology. A manual for veterinary students and practitioners.]* pp. xvi+364. Jena: Gustav Fischer. DM 49. **2470**

This manual of veterinary histopathology was designed to meet the requirements of students at Leipzig University. The first chapter deals with the histopathology of inflammation. It is followed by a long chapter on neoplasms, then by chapters on each of the body systems. The text describes briefly each type of histological change and gives examples of common diseases in which the changes are encountered: it is a simplified account, suitable for students. The main value of the book lies in the 434 illustrations of histological sections, most of which are camera lucida drawings, often coloured. There is no comparable work in contemporary veterinary literature; a translation should prove most useful for English-speaking students.

—R.M.

— (1955). *The comparative endocrinology of vertebrates. I. The comparative physiology of reproduction and the effects of sex hormones in vertebrates. Proceedings of a conference held at the Department of Zoology, University of Liverpool from 12 to 16 July 1954. Memoirs of the Society for Endocrinology No. 4.* [Edited by: JONES, I. C. &

ECKSTEIN, P.] pp. x+253. Cambridge: University Press. 50s. **2471**

The book consists of fourteen papers; the names of the authors of only three, those referring to the mammalian subject, will be familiar to the worker in the veterinary field. Of the remainder, eight cover phenomena in fish and amphibia, or general considerations, and their application to "applied" endocrinology can only appear remote. One notes here the large volume of the work that has been done and how much more single-minded and better-documented it has been than much of that in the "applied" sphere. Three papers refer to birds; one an elaborate study of the physiology of ovulation in the fowl, one reviews the field of male endocrinology with but little reference to domestic species, and one a general paper on the female does show some bias towards the gallinaceous type. These papers will be useful to those concerned with poultry. The general review of reproduction in mammals provides useful "background" information for the "applied" worker. The author's knowledge of metoestrous bleeding in the cow is somewhat incomplete. The review of the effects of sex hormone administration to mammals is of more immediate practical use, though it contains some faulty deductions based on insufficient knowledge of the cow.

The more recent information on freemartin production is fascinating.

—F. L. M. DAWSON.

FRITZBØGER, E. [Docent i beslaglaere ved Den kgl. Veterinær- og Landbohøjskole]. (1955). *Vejledning i kvaegets klovpleje. [Guide to care of the hooves of cattle.]* pp. 85. Copenhagen: A/S Carl Fr. Mortensen. Da. Kr. 11. **2472**

This handbook, written at the request of participants in short courses on the subject held at the Veterinary College, Copenhagen since 1952, is in four main sections:—Anatomy of the hoof and of the limbs (22 pages); Care of the hooves (15 pages); Diseases of the hoof (26 pages); and Trimming of the claws (23 pages). The author is Lecturer in Farriery at the Veterinary College. There are nineteen figures (drawings and photographs), all well reproduced.—F.E.W.

BOOKS RECEIVED

[Notice of recently received books in this list does not preclude review.]

- BERGE, E. & WESTHUES, M. (1956). Tierärztliche Operationslehre. [**Text - book of veterinary surgery.**] pp. xi+374. Berlin: Paul Parey. DM 29.60.
- EMSBO, P. (1955). Subaortal stenose. Komparative studier over medfødt subvalvulaer aortastenose (venstresidig konusstenose) hos svin og mennesk. [**Comparative studies on congenital stenosis of the aorta in pigs and human beings.**] pp. 223. Copenhagen: Dansk Videnskabs Forlag.
- JUKES, T. H. (1955). **Antibiotics in nutrition.** pp. 128. New York: Medical Encyclopedia, Inc. \$4.00. [Antibiotics Monographs No. 4.]
- NEUMANN-KLEINPAUL, K. & DOBBERSTEIN, J. (1955). Lehrbuch der Gerichtlichen Tierheilkunde. [**Fröhner's text-book of forensic veterinary medicine.**] pp. xii+354. Berlin: Paul Parey. 11th Edit. DM 31.60.
- OTTOW, B. (1955). Biologische Anatomie der Genitalorgane und der Fortpflanzung der Säugetiere. [**Biological anatomy of the genital organs and reproduction in mammals.**] pp. vii+201. Jena: Gustav Fischer. DM 27.
- SMYTHE, R. H. (1956). **Veterinary ophthalmology.** pp. xi+356. London: Baillière, Tindall and Cox. 35s.
- (1956). **Gestation. Transactions of the Second Conference, March 8, 9 and 10, 1955, Princeton, N.J.** [Sponsored by the Josiah Macy, Jr. Foundation.] [Edited by: VILLEE, C. A.] pp. 262. New York: Josiah Macy, Jr. Foundation. \$5.00.

NUTRITION ABSTRACTS AND REVIEWS

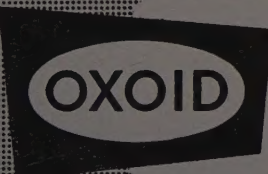
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